Examining educators' conceptualisation of critical thinking in the Algerian higher education context and exploring the challenges faced in promoting critical thinking among students: A qualitative investigation

CHERGUI, AMIRA

Examining educators' conceptualisation of critical thinking in the Algerian higher education context and exploring the challenges faced in promoting critical thinking among students: A qualitative investigation

By Amira CHERGUI

First Supervisor: **Prof. Julie RATTRAY**

Second Supervisor: **Prof. Catherine MONTGOMERY**

A Thesis Submitted for the Degree of Doctor of Philosophy

School of Education, Durham University

September 2023

Abstract

This thesis addresses two substantial questions, namely: how critical thinking is conceptualised in the Algerian higher education context and to what extent teachers believe they support its development and how they support students' development of critical thinking in this particular context. The research aims not simply to make an evaluative judgment of the nature of critical thinking, but rather, to capture teachers' authentic, precise and significant perceptions around critical thinking conceptualisation and development. The research also aims to draw out some significant implications for teaching and learning in the Algerian higher education context which may be pertinent in similar contexts.

The research is qualitative in nature adopting an interpretivist approach based on social constructionism that aims to include richness in the perceptions collected and in turn addresses the central research questions. The aim is to comprehend how people perceive, believe, and feel about the world, seeking to understand their different perceptions. Qualitative data was elicited through semi-structured online interviews with 16 teachers at Larbi Ben Mhidi university in Oum El Bouaghi, Algeria. Analysis of the teachers' perspectives in their answers to the interview questions is presented in a thematic analysis.

Overall, it seems that the conceptualisations of critical thinking provided by the interviewed teachers overlap in respect of their provided definitions which understand critical thinking as a set of skill and/ or dispositions. The responses provided by these teachers do also reflect their awareness of the importance of critical thinking and the purposes it could be serving either academically or personally. Key findings emerging from the data analysis show that to develop critical thinking among students, the teachers implemented during their classes different methodologies including classroom discussions, debates, workshops, brainstorming, problem-solving activities, asking questions and lastly self- assessment. However, it the degree to which these teachers supported their students critical thinking is limited as they highlighted different challenges, notably in respect to the context, students, teachers, policy and the social norms. These challenges they believe have significant implications in their support of their students' critical thinking development.

The study is unique in that it provides valuable insights for teachers and researchers in the area of critical thinking conceptualisation and development in higher education, especially for those in Algeria, or in other similar contexts, where graduates are missing such skills. Finally, it is hoped that the current study will inform curriculum designers about future directions and

much-anticipated reforms of the Algerian program and practitioners about areas that need to be addressed to further improve the integration of critical thinking into their pedagogical practices.

Keywords: Critical thinking, Algerian Higher Education, Qualitative approach, Semi-structured interviews.

Statement of Copyright

Declaration

I declare that this thesis results from my own work and has not previously been submitted for a degree at this or any other university.

Acknowledgements

I thank Allah first and foremost for accomplishing this work, and may Allah's peace and blessings be upon His Servant and Prophet, Muhammad (peace be upon him).

All thanks and appreciation go to my supervisors, Professors Julie Rattray and Catherine Montgomery who blessed me with support, advice and encouragement to complete this journey. Your timely, insightful, and critical feedback have been immeasurably helpful, providing me with needed guidance to complete the best work I could produce.
Thank you so much for your commitment, motivation, and dedication to my success.

I am utterly grateful to the examining committee Prof. Vivienne Baumfield and Dr. Louise Gascoine for accepting to read this work. Each of you, with your special expertise, provided me with invaluable advice, encouragement, and careful guidance to polish up this piece of research.

Special thanks go to Ms. Selma Sia for her endless support. Thank you for constant reminders and words of encouragement that have meant a lot to me and have kept me going through some of the most challenging periods in my life.

I would also like to thank all the staff at the School of Education for providing academic support and a family atmosphere throughout the four years of my studies, specifically Dimitra Kokotsaky and Sharon Riddle.

Finally, I would like to thank all the teachers who took part in this study for their cooperation and endless help.

Dedication

In memory of my beloved father and my late grandparents

whom I miss so much

To my mother

The reason of what I became today

To my beloved husband

The source of faith and support to finish this thesis

To my sweetest twin girls ever

The source of all happiness, laughter and cuteness

To my beloved brothers, loving sister and nephews

To a special person who believed in me Farah Sheikh

To my best friends and closest family members and cousins

Thank you all for the love, support and encouragement

Table of Contents

List of Figures

List of Tables

List of Acronyms / abbreviation

CT: Critical thinking

HE: Higher education

EFL: English as a foreign language

ESL: English as a second language

ICT: Internet technology and communication

EACEA : Education, Audiovisual and Culture Executive Agency

LMD: Licence Master Doctorat

BMD: Bachelor Master's Doctorate

Chapter One: Introduction

A major concern of higher education systems is the preparation of their students to become effective citizens who think and act productively in their societies and in turn support economic and socio-cultural innovation within their communities (Souleh, 2014). Productive in this sense means that on graduation and in moving into work, graduates will be able to think critically, make decisions and solve problems as indicated Raikou and Karalis (2016) "students will learn to think critically and to evaluate the knowledge offered to them, prior to taking on operational and leadership roles in society" (p.19). Numerous academics (Karalis et al.,2007; Karalis 2010) argued that universities should offer programs that offer students the chance to engage with differing perspectives and even integrate the development of critical thinking skills into professional training. The Algerian higher education is one such system that is trying to achieve this goal particularly in view of claims made by some Algerian university students that the outcome of their learning is irrelevant to their community needs (Benouar, 2013). It is therefore of concern that research has also revealed that teachers have been found to be less informed about what critical thinking is and how to teach and develop it among students (Achoura & Merrouche, 2021). In addition, it has become necessary for graduates to respond critically to a rapidly changing global environment. In this regard, understanding and developing student' critical thinking should be a benchmark of higher education.

Despite the importance of critical thinking in higher education, it remains a contested concept with some arguing that it is a set of cognitive skills (Halpern, 2014) while others contend that it is much a combination between skills and dispositions (Ennis, 2016). This research therefore seeks to shed light on critical thinking conceptualisation, development and the involved challenges by undertaking semi-structured interviews among 16 teachers at Larbi ben Mhidi university. A thematic analysis of these interviews based on teachers' responses will then be explored in order to find out more about how this complex and contested concept is understood by academics in the Algerian higher education context. The contribution to the literature will include exploring teachers' understanding of critical thinking and how they believe they support its development in students where so many challenges impede critical thinking integration within the classroom practices. The impact of this study will involve informing curriculum designers about future directions and much-anticipated reforms of the Algerian program and the teachers about areas that need to be addressed to further improve the integration and development of students' critical thinking.

1.1 Statement of the Problem

Due to the need to respond to the ever-changing world and the great role that critical thinking plays in developing the educational sector and in turn societies (Raikou & Karalis, 2016) let alone its complexity (Halpern, 2014), there is a large body of research discussing the concept of critical thinking. As Moore (2017) denotes, there is uncertainty about what it means and how it should be taught because though the concept can be easily recognised by academics, it is nevertheless not easily defined or explained to students or teachers. Yet all agree that critical thinking is an important graduate attribute (Tan, 2017; Bezanilla et al., 2021). Research in the field has settled on the idea that critical thinking is seen as an amorphous concept difficult to mould in one single definition due to the highly complex nature of critical thinking (Moon, 2008).Adding to the difficulty in establishing an understanding of criticality, scholars exploring critical thinking come from academic disciplines which differ greatly in theory and practice namely, philosophy, education, history, cultural studies and psychology. Atkinson (1997) has explained that "academics who are normally considered masters of precise definition seem almost unwilling or unable to define critical thinking. Rather, they often appear to take the concept on faith, perhaps as a self-evident foundation of western thought – such as freedom of speech" (p.74).

The underpinning debates consider issues related to the conceptualisation of critical thinking and there is widespread disagreement about what it is exactly, how it might be clearly conveyed and how it should be promoted or developed in educational settings. Bailin et al. (1999) have explained that: "agreement about teaching critical thinking persists only so long as the theorists remain at the level of abstract discussion and permit their use of the term to remain vague" (p.285). Davies (2015) has also described the situation thus: "despite more than four decades of dedicated scholarly work 'critical thinking' remains as elusive as ever" (p.41). For their part, Sternberg and Halpern (2020) have suggested that while researchers generally agree on a definition of critical thinking, they also express scepticism, particularly regarding the demarcation of its essence. There is therefore a need to know more about this concept, especially with the belief of its absence in non-western educational contexts (Abasaid & Ferreira, 2022) and one of the purposes of this study is to address this gap - by looking specifically at the Algerian context and generating data from teachers' views of how this complex concept is actually understood and promoted by academics in their teaching practices. This approach will help to bridge the gap between critical thinking as a policy and its reality in educational settings. This research objective is significant as previous research

has demonstrated a discrepancy in the conceptualisation of critical thinking skills between the higher education sector and the labour market (Pnevmatikos et al., 2023). Consequently, in the present study the researcher will explore the following issues: how can critical thinking be defined, is critical thinking an individual attribute or a social aspiration, is critical thinking discipline- specific, what does critical thinking in higher education involve, what are its dimensions, can it be taught and learned, what are critical thinking models, how can it be fostered at university level and what are the hindrances that impede teachers' support of students' critical thinking development.

1.2 Rationale for the study

As indicated above, a major concern of higher education systems has shifted toward preparing effective citizens who think productively in their societies as, in turn, this way of thinking has been shown to lead to attainment of innovation within the economic and socio-cultural aspects of communities which students rejoin after graduating (Souleh, 2014). Pnevmatikos et al. (2023) declared that: "higher education institutions are responsible for preparing and equipping undergraduate students with the skills required by the labour market, such as critical thinking" (p.1).

Algerian higher education is one of the many systems trying to achieve this important goal. Thus, for example, in the context of foreign language teaching, a study by Melouah (2017) asserts that teachers need to consider developing students' critical thinking when designing foreign language curricula. She also claims that " in Algeria, critical thinking has not yet been permeated across EFL (English as a Foreign Language) university curriculum and many English language classes fail to teach critical thinking" (2017, p.9864). For that reason, it is necessary to consider whether developing students 'critical thinking is indeed the benchmark it should be in higher education. Given that productive and effective citizens are those who have succeeded in developing their critical thinking (Marin & Halpern, 2011), then it is important to establish whether higher educational institutions are indeed developing critical thinking skills in their students, how teachers think about critical thinking development and the extent to which their input can be considered to be effective in producing critical thinkers. The development of students' critical ability is seen as a means of empowerment, not just within a students' career in higher education, but for life beyond (Harvey & Knight, 1996 cited in Walker & Finney, 2006).

1.3 Significance of the Research

It has been advocated that teachers' beliefs, conceptions or attitudes held about any aspect of their work have a huge impact on their decision-making and practice and thus constitute what is called the culture of teaching (Kanik, 2010). Consequently, teachers' beliefs regarding critical thinking are emphasised in this study. The research undertaken is an attempt to approach critical thinking within the Algerian higher education context by investigating not only teachers'' understanding of critical thinking, but also how they believe they support its development in classrooms. Thus, the research sheds light on how teachers perceive critical thinking and how these perceptions are reflected in their teaching practice in developing students' critical thinking. This may be beneficial not only in the Algerian context but also for other countries that have been eager to promote critical thinking in their educational contexts and it will help to bridge the gap between critical thinking being only a policy of the BMD higher education system (see section 2.5) and its reality inside classrooms.

Moreover, critical thinking plays a pivotal role in developing societies as it contributes to the development and success of individuals at the academic level and also has an impact throughout their daily lives. Critical thinking skills are important skills which are required to face the challenges of the 21st century, specifically the need to the formation of a society consisting of qualified human resources, namely independent individuals, willing and capable of realising the ideals of their nation (Hidayati & Sinaga, 2019). Talavera (2016) specified that "the chances are high that they 'the students' will have to deal with some scientific issue that will affect their lives, which requires a level of higher-cognitive skills of critical thinking necessary to either support or challenge the possible solutions provided by the scientific community" (p.3). Developing students' critical thinking has then become a particularly important issue in Algeria following the recent policy reforms especially at the level of higher education and the integration of the BMD system in 2004 (see section 2.3). Despite widespread agreement that critical thinking is an essential graduate attribute, there is a widespread disagreement about what exactly it is, with a definition debate having contented as to whether it is a skill set, a set of dispositions or ways of thinking (Pnevmatikos et al., 2023). Consequently, there seems a need to explore critical thinking in the Algerian higher education context in relation to these reforms and to examine the efficacy of these reforms in support of students' critical thinking development and its integration in classroom practices.

Furthermore, there is a lack of qualitative research on how teachers view critical thinking, how they teach it to their students, and the challenges they face in doing so. In her research, Haston (2020) suggests that there is a need for a straightforward and universally accepted definition of critical thinking as educators have thus far been unable to provide a clear definition, which has resulted in a lack of understanding of the concept. This lack of clarity raises concerns about the ability to achieve consistency in the curriculum.

Moreover, whilst research has been conducted in the field of critical thinking, research on Algerian higher education is relatively scarce and such research as has been conducted has typically involved quantitative approaches to data collection. This includes for example research that targets strategies to develop critical thinking in different disciplines such as a study to assess secondary school teachers' classroom practices in relation to critical thinking enhancement among learners (Baghoussi, 2021). Another study investigated the role of multimodality in promoting Algerian EFL students' critical thinking skills case study: third year EFL students at Biskra university (Bougherara & Khaldi 2021). Other studies also investigated the use of short stories to enhance EFL students' critical thinking (Boumediene, 2021). Further research has considered teaching critical thinking in EFL classrooms: students and teachers' perspectives (Benmouhoub, 2022) and the effect of university education on developing learners' critical thinking skills, as well as a comparison between freshmen and senior EFL learners at the university of Guelma (Abdaoui & Grine, 2020). These studies examined teachers' practice regarding the teaching of critical thinking in the classroom and the different strategies that could be helpful for its development, most of them are quantitative in nature or are described as using a mixed methods approach. This implies that in the Algerian context qualitative research about critical thinking and its nature is scarce and that further research is therefore a necessity. This was a motive for the present researcher to conduct a qualitative study on this particular issue, which will contribute to the limited literature on critical thinking in the Algerian context unravelling any issues in respect of the nature of critical thinking and its development. The study's findings could also provide insightful interpretations of the obstacles teachers face in an effort to improve their students' critical thinking skills and offer practical guidance for curriculum designer and teachers alike for further improvement and integration of critical thinking within practice.

Given the arguments stated above, changes in higher education policy in Algeria and the need for an education benefiting the world, it is important to consider what university teachers in Algeria think of critical thinking. Moreover, examining the extent to which these teachers

are actively engaged in improving their students 'critical thinking and the means through which they seek to develop this facility in their students will also be significantly advantageous in this research.

1.4 Research Objectives

Critical thinking is a complex and a much-discussed concept (Moon, 2008) and yet it is frequently given centrality within higher education in relation to its being an attribute/skill that students are expected to develop. Whilst much has been published in the area of critical thinking globally little is known about how it is conceptualised and applied in the context of Algerian higher education. Despite this lack of published literature, the Algerian government have emphasised the need for higher education to develop critical thinkers in its most recent education policy initiatives (Practical guide for the LMD system, 2011). For this reason, the current study aims to investigate academics' conceptualisation and development of students' critical thinking within the Algerian Higher Education context. To guide the process of investigation, two essential objectives are formulated to achieve the research aims.

- To explore teachers' understanding and conceptualisation of critical thinking in the Algerian higher education context.
- To investigate the extent to which teachers believe they are supporting the development of their students' critical thinking, and their means of achieving this in the context of Algerian higher education.

1.5 Research Questions

Accordingly, the proposed study poses two major research questions which are as follows:

Research Question 1:

- How do teachers within the Algerian higher education context conceptualise critical thinking?

The first research question explores the teachers' understanding and conceptualisation of critical thinking in the Algerian higher education context. It focuses particularly on perceptions of university teachers about the nature of critical thinking, its definition, constituents and main characteristics.

Research Question 2:

- To what extent do Algerian university teachers believe they support students' critical thinking development and how they believe they do this?

The second research question seeks to understand the extent to which the teachers believe that they support their students' development of critical thinking in the Algerian higher education context. It serves also to investigate how students' critical thinking is fostered in this higher education setting by exploring the means through which the teachers support their students' critical thinking development.

1.6 Research Methodology

1.6.1 Research Approach

The proposed research is located within the interpretivist research paradigm (Alharahsheh & Pius, 2020) and utilises a qualitative research design. This approach has been chosen because, as Smith (1993) remarks, it offers an effective way to explore experiences and perceptions of a construct. Given the research problem along with the researcher's worldviews, the decision concerning the choice of the research design is informed as this research design is deemed to be necessary to ensure that the evidence obtained enables us to answer the initial research questions as unambiguously as possible (De Vaus, 2001, p. 9). Qualitative approaches are used to analyse the behaviour, perspectives, feelings, and experiences of people and what is at the core of their lives (Fraenkel & Wallen, 2009). These qualitative approaches ensure the recognition of the subjective elements of the research process; they are not limited to one perspective on different social subjects and often generate unexpected insights through the open-ended nature of enquiries. In this regard, Nassaji (2020) has explained that : "qualitative research can be broadly defined as a kind of inquiry that is naturalistic and deals with non-numerical data. It seeks to understand and explore rather than to explain and manipulate variables" (p. 427). He has also added that it is an interpretative process that emphasises the patterns of development rather than the product or outcome of the research and that it could be used to explore an array of questions for which a quantitative method may not be suitable. Therefore, with an interpretivist lens, the researcher in the present study will look at the perspectives of a small number of participants. This approach also ensures responses to the research questions posed which will target not simply an evaluative judgment of the nature of critical thinking, but rather, will capture authentic, precise and significant perceptions around critical thinking and draw out some important implications for teaching and learning in the Algerian higher education context.

1.6.2 Data Collection

In selecting a feasible instrument for data collection and taking into consideration contextual constraints, semi-structured interviews serve as the fundamental means that bring out the data needed to answer the research questions. The interview questions were designed with reference to the literature review aiming to explore the important issues involved in investigating university teachers' understanding of critical thinking and how they believe they support its development. By interviewing teachers, we explore their views, weaknesses and strengths regarding critical thinking development. Perceptions of lecturers are important in educational research, as they help the researcher gain insights about academics' views of the research area. The aim of this qualitative research instrument is to obtain an in-depth understanding of the explored problems or phenomena (Creswell, 2013). Interviews also provide a more in-depth knowledge as the researcher has the opportunity to deepen the discussion with the participants. All interviews were semi-structured as this approach enabled the interviewer to question participants in a consistent manner while also allowing for exploration in spontaneous and potentially fruitful directions (Shank & Brown, 2007). Referring to the implementation of the interviewing method Mockovak (2016) has stated that it "helps to relax respondents, encourage open conversations, improve response, address respondent concerns, and ideally obtain high quality data" (p.1637). The initial questions of the interviews have been designed to explore conceptualisations of critical thinking and also consider its application and development and the challenges that impede its development in the Algerian higher education context.

1.6.3 Sampling and Data analysis

In order to gain high quality data, it is important to prioritise a substantial sample. So, for sampling, Patton (2014) highlights that there are no rules for sample size in qualitative research. Sample size is dependable on what you want to know, the aim of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources. The number of participants in this sample is limited to sixteen teachers because the purpose of this study is not to make broad generalizations, but rather to closely examine how these individuals comprehend critical thinking in order to determine the most effective ways to support students in developing these skills. "What is more important is the potential of each informant to aid the researcher in developing theoretical insights into the

context being studied as indicated by Denscombe (2010), the aim is to illuminate the general by looking at the particular" (p. 53).

Following this line of thought, I will interview sixteen educators from different disciplines. I chose four academic disciplines that belong to the field of social sciences and language education: Sociology, Psychology, Political Sciences and English as a foreign Language teaching. These are areas that heavily rely on skills of analysis, communication, understanding complex issues, questioning assumptions, solving problems and argumentation. The reason behind choosing such a sample is to gain insights from different teachers from different disciplines to mirror the voices of teachers' understanding of critical thinking in the Algerian higher education context. So, the choice is also purposeful as these disciplines are also widely taught at Oum El Bouaghi University which is the context for this study. Sixteen teachers in total were interviewed: four from each of the different disciplines of interest to the study. The interview questions will be translated into the Arabic language as most of the teachers will be using Arabic which is the language of instruction in Algerian classrooms.

To identify recurring patterns and themes from the qualitative data, a thematic analysis will be adopted. Thematic analysis is useful for this study since it provides an in depth understanding of the research topic (Browne & Clarke, 2020). Thematic analysis will play a pivotal role in examining the perceptions of research participants, highlighting similarities and differences, and generating unanticipated ideas. The advantage of using a thematic analysis is that it summarises key features of the data set in a well-structured approach to produce a clear and systematic report (King, 2004). In this study, there will be a combination of inductive and deductive analysis for the themes and patterns derived from the interviews. More detail on the methodology, the research design and analysis will be provided and discussed thoroughly in Chapter Four.

1.7 Outline of the Thesis

The thesis is structured into seven chapters. The introductory chapter presents the rationale for the study, the potential significance, the research objectives, and the research questions before moving on to the research methodology and it ends with an outline of the thesis chapters. Chapter 2 provides a brief overview of the current research context and discusses the Algerian higher education in particular from the first university establishment till the adoption of the BMD system . This chapter focuses then on the educational reforms

that took place from 2004 and the state of critical thinking within this context. In Chapter 3, the researcher reviews the literature discussing critical thinking in higher education contexts looking particularly at how critical thinking may be defined, the discussions underpinning generalisability and domain- specific views of critical thinking, the social and individual nature of critical thinking and its importance, the models and the methodologies for the development of students'critical thinking and lastly the barriers challenging the development of students' critical thinking. Chapter 4 is concerned with the research methodology. It explains the research paradigm and decisions regarding data collection approaches and the data analysis approach. The study employs an interpretivist approach and uses semi-structured interviews as a method to collect data from which a thematic analysis will be conducted. Chapter 5 presents the findings from the data analysis of the teachers' semi-structured interviews. This addresses the two major questions of the current research considering the conceptualisation and development of critical thinking. In chapter 6, a discussion of the findings outlines and integrates the overall key findings from the study obtained in chapter 5 with reference to the two research questions by relating them to existing literature. Chapter 7 provides a summary of the thesis, highlighting the main findings in response to the research questions. It also discusses the theoretical and practical implications of the findings and proposes some implications for future research.

Chapter Two: Critical Thinking in the Algerian Higher Education Context

2.1 Introduction

Aiming at investigating teachers' understanding of critical thinking and its development among students in the Algerian higher education context, this chapter will set the scene for the current study by discussing its context 'the Higher Education in Algeria' focusing on the higher education system's characteristics, the reforms, and the position of critical thinking within this context. The chapter will then be composed of seven parts. It starts by providing a holistic picture of Algeria via presenting its history, then it moves to present the higher education system in Algeria, the types of Higher Education institutions found, the subjects taught in Algerian Higher Education institutions; it also showcases the reforms that underwent the Algerian Higher Education and a discussion of the status of critical thinking in the system ending with a conclusion.

2.2 A brief History of Algeria

Algeria, officially the People's Democratic Republic of Algeria, is a country located in North Africa, bordered by the Mediterranean Sea to the north, Tunisia to the northeast, Libya to the east, Niger to the southeast, Mali, Mauritania and Western Sahara to the southwest and to the west Morocco. It has a semi-arid geography, with most of the population living in the fertile north and the Sahara dominating the geography of the south. Algeria covers an area of 2,381,741 kilometres square, making it the world's tenth largest nation by area and the largest country in Africa. It has a population of over 44 million people (Education, Audiovisual and Culture Executive Agency 'EACEA', 2021) The capital city is Algiers. Algeria gained independence from France in 1962 after a long struggle for liberation (132 years of French colonialism). The country consisting of 58 provinces is a regional power in North Africa, and a middle power in global affairs and one of the largest economies on the continent, based largely on oil and gas exports. The majority of Algeria's population is Arab, and a minority is the Amazigh, all practicing Islam religion. The official languages of Algeria are Arabic and Tamazight. Native Algerian Arabic is the main spoken language. Tamazight is the second official language. French also serves as an administrative and educational language in some contexts, but it has no official status. With the recent reforms in Higher education which emphasises the importance of using English as a medium of instruction at universities, English is remarkably and increasingly gaining a seat at the table of the official languages in

Algeria (Encyclopaedia Britannica, 2021). This is part of the decolonising the curriculum agenda which aims at exposing and disrupting the ongoing processes of colonialism, known by the uncritical cultural reproduction of Eurocentric curriculum knowledge and discourses (Bhambra et al., 2018). As indicated Jacob (2020), these academic frames in the Algerian context have led to "English being held up as a'decolonial'option, supposedly allowing for the bypassing of existing hierarchies and the renewal of social and political categories" (p.1013). Implementing English language as a media of instruction and research became a key part of the decolonial agenda in higher education in Algeria.

2.3 Higher Education in Algeria

In relation to the focus of the study, I will briefly introduce the higher education system in Algeria and the reforms it underwent. There is a need to clarify first that the Algerian Constitution established in 1963 and amended in 1989, 1996 and 2016 through the article 53 signposts that the government is responsible for the organisation of the educational system and that for all Algerians, the right to education is guaranteed; basic education is compulsory, and education is free for all. Education in Algeria consists of primary education (5 years old to 10), intermediate education (10 years old to 14), and secondary education (14years old to 17), which are supervised by the Ministry of National Education, in addition to vocational training, which is supervised by the Ministry of Education and Professional Training, as well as higher education which is supervised by the Ministry of Higher Education and Scientific Research (Education, Audio-visual and Culture Executive Agency, 2018).

Higher education comes right after compulsory education, and it necessitates that students hold a baccalaureate diploma to be enrolled. Higher education as indicated by Elrabii (2008) is the stage in which students continue their studies after completing secondary education. This stage includes studying specialised subjects in educational institutions such as universities, colleges, and institutes (see section 2.4). Elrabii (2008) has also indicated that higher education can be obtained online, at work sites, or through special training programs. Hamzaoui (2021) indicated that: "the higher educational system in Algeria is viewed to be gradually moving through various stages punctuated by a series of reforms which try to update the educational system according to the socioeconomic, environmental and technological needs of the country" (p.132).

Since the independence, the higher education system in Algeria went through four major stages of reforms in terms of its organisation and curricula and it was due to the global changes, that it became necessary to alter the Algerian educational system to deal with the

new trends of higher education sector (Hamzaoui, 2021). These stages of reform are namely: the establishment of the first national university, initial reforms of the higher education system, strengthening and rationalisation of the system and lastly the adoption of the Bachelor - Master – Doctorate higher education system known as the BMD (Kitouni, 2019). These stages will be discussed in this section thoroughly for it is important to establish the grounds of the higher education in Algeria and its development particularly in the last decades.

Phase One: The establishment of the first national universities (1909 - 1970)

The French established the first Algerian university in 1909 with only 500 students. It was the only university in the country till 1962. The university was first an institution of pharmaceutical sciences and Medicine that was established in 1859 and then in 1879 the faculty of science was opened and afterwards the faculty of Arts and Law in 1909 and more other institutes resulting in the birth of the University of Algiers during the colonial era (Official website of the Ministry of Higher Education and Scientific Research of Algeria, 2019). Afterwards, the Algerian government established three universities in 1962 the year of independence the one in Algiers the capital, the second in Oran in the west of Algeria and the third in Constantine in the east of the country together having only an estimation of 2000 students and less than 200 teachers.

In the academic year 1962-1963, the number of students enrolled in total was estimated 2,725. Then, in 1967-1968 the number increased to 7478 students enrolled with an increase rate of 174. 42% to a number of 12243 students in the following academic year (1969-1970). On this basis, the reform of higher education was a requirement to target the needs of the sector from infrastructure, teachers and educational programmes and particularly as the Ministry of Higher Education was established in 1970 which was under the auspices of the Ministry of National Education (Zaghib &Tankout, 2013).

Despite the many economic, social and political radical changes and the increase of the number of graduates, yet the higher education sector in Algeria was operating until 1971 without taking into consideration all of those transformations. Consequently, several problems arose. Djillali (2013) indicated that the increase in the number of students has resulted in creating weak reception structures for these students. The number of students increased from 2,809 in 1963 to 20131 students in 1970. The number of graduates went from 93 to 1,200 for the same period. The number of professors was estimated at 1,277, including 435 Algerians in 1970, whereas there were only 380 professors in 1963.

Consequently, this situation demarcated the need of a new reform to absorb these growing flows of new students, a major program of university, infrastructure, more teaching staff, and socio-academic support to deal with core problems such as the failure to comply with the country's social and cultural changes, the lack of continuity between secondary and university education systems, failure of the sector to solve the problem of the overcrowded classrooms and the shortage of the numbers of teachers (Bouchikhi & Barka, 2017).

- **Phase Two: Initial reforms of the higher education system (1970-1990)**

With the establishment of the Ministry of Higher Education in 1970 and the launching of the first major reform of higher education in 1971, the restructuring process was carried out in accordance with four main themes: the reformulation of training programs holistically, the organisation of new curricula, the acceleration of the development of the higher education sector and the reorganisation of university structures with a shift from the colleges to the institutes system (Official website of the Ministry of Higher Education and scientific research of Algeria, 2019).

In addition to the establishment of the Ministry of higher education, the 1969- 1970 period was characterised by a reflection and a review of the content of the higher education system inherited from the French colonialism for a decisive development in the fate of the university. Thus, a profound reform of higher education was planned with an objective to ensure the training of more qualified professionals in the field of higher education and the establishment of Algerian universities that are more integrated into the social and political development processes (Zaghib &Tankout, 2013). The University has also witnessed a remarkable development in liaising between the labour market and helped to create more job opportunities, but the reform introduced at this stage has been criticised for it was characterised by the poor control of pedagogical structures and the increased numbers of students and the inappropriateness of the course content and methods of teaching (Trouzin, 2012).

From 1980 to 1989, a number of improvements and reinforcement measures were taken to ensure the support of the needs of the nation’s economy through the higher education sector. First the explicit integration of higher education into the national planning process. This is reflected in the 1982 university map, which was updated in 1984 and reflects the annual needs of graduates and their disciplines. The second procedure relates to the reorganisation of the

different disciplines and specialities. The third is the steering and proliferation procedures. The aim is to improve the students' learning quality through the development of university enrolment programmes to guide new baccalaureate holders (Official website of the Ministry of Higher Education and Scientific Research, 2023). Djillali (2013) indicated that this phase has been characterised by the increase of the number of students, over crowdedness of classrooms, lack of specialised teachers and the lack of facilities and equipment. The six-unit study system was introduced in this phase of reform. This phase has also witnessed the rapid growth of Arabisation 'as part of a decolonisation agenda of higher education (Jacob, 2020)' which has reached over 90% in the humanities and legal sciences in 1989. Bouchikhi and Barka (2017) indicated that at Independence from the French colonialism, higher education in Algeria was faced with a large deficit of teachers who mastered the Arabic language. This resulted in an urgent call for cooperation with the Arab world. Yet, this process was limited owing to the lack of necessary pedagogical pillars such as Arabic professors.

- **Phase Three strengthening and rationalisation of the system (1990- 2004)**

This phase became known as a structural reform of the University introducing the classical (old) system, consisting of four years bachelor, two years magister - four years doctorate and it has been marked by several changes since 1999 (Meziane & Mahi, 2010). The first of these changes being to reintroduce the system of colleges rather than institutes. This phase has also known an expansion in the university number and locations with the establishment of universities and other university centres, annexes to universities, higher schools and institutes in forty- eight states of the country at that time. Six university centres were established in the regions: of Ouargla, Oum El Bouaghi, Skikda, Jijel, Saida and Biskra. Consequently, the higher education sector counts 17 universities, 13 university centres, 6 postgraduate teachers' schools and 141 national higher education institutes with 12 specialised institutes and schools (Elzahi, 2016). These types of university institutions will be explained thoroughly in section 2.4.

This reform was criticised for it has been operational without any pre evaluation of the existing system in order to identify the advantages and disadvantages and benefit from such findings in the future reform (Meziane & Mahi, 2010). In addition, in this reform, "massification was a core part, in part motivated by the demographic reality of a large youth population, but also by explicit policy choices undertaken by the government" (Bouchikhi & Barka, 2017, p.46).Moreover, "the reform did not respond to main challenges imposed by the changing situation of economy, of politics and of the society in Algeria, an important

shareholder of many European countries"(Sarnou et al., 2012, p.180). This situation led the government and education policy makers to rethink the higher education system in Algeria with an aim to attain socio economic development of the country.

- **Phase Four: the adoption of the Bachelor - Master – Doctorate higher education system (2004- today)**

In the academic year 2004- 2005, the higher education sector had witnessed the adoption of new system that stands for the bachelor, master and doctorate (BMD). The new system is based on a three-cycle degree framework that aims to make the Algerian higher education system more compatible and comparable with the European and international standards making radical changes to pedagogical process. The LMD system as indicated Metatla (2016) seeks to improve the quality and diversity of university education, as well as to promote the mobility of students and academic staff. This system organises the studies into semesters and educational units, which are grouped into four categories: fundamental, methodological, discovery and transversal units. (Official website of the Ministry of Higher Education and Scientific Research, 2023).

As indicated above the higher education system in Algeria follows the bachelor-master-doctorate (BMD) system. The first level is the bachelor's degree, which typically takes three years consisted of six semesters of study. It provides students with a solid foundation in their chosen field of study with the goal of enabling the student to enter directly into the world of work or to enrol for the master's course. After completing their bachelor's degree, students can pursue a master's degree, which usually takes two years. This stage consists of four semesters accessible for every student who holds an academic or a professional Bachelor certificate and meets the required conditions set by the chosen university. It involves more specialised coursework and research that prepares students for high levels of performance and skill (professional master) or for scientific research directed from the beginning to carry out research activity in the university environment (research master). Finally, students can pursue a doctorate degree, which typically takes three to five years and involves original research that contributes to the advancement of knowledge in their field.

The BMD system is designed to provide students with a clear path for advancing their education and career prospects, while also ensuring that they have the necessary skills and knowledge to succeed in their chosen field. This system is also operational in neighbouring countries such as Tunisia and Morocco as they have adopted it since 2004 as well. The status

of the higher education in these countries is almost similar to the Algerian one as described Meziane and mahi (2010): “it is common knowledge that Arab universities, and Maghreb universities in particular, still suffer from weaknesses on several levels, including aspects of management, staffing, pedagogy, quality of structures and conditions of student admissions, etc” (p.268). Despite this situation, these countries aspire for the development of this sector and work towards the adaptation of global trends through different reforms. The BMD system has helped to modernise Algeria's higher education by making it more competitive on the global level. The LMD system has been praised for its potential to produce human capital and to harmonise the Algerian higher education sector with the rest of the world (Melouk, 2013).

Since then, the sector grew over 58 provinces in the academic year 2019-2020 to 106 higher education establishments: 50 universities, 13 university centres, 20 national high schools, 10 normal high schools, 11 higher schools for teachers, and 2 university annexes, 59,000 teachers and over 1.7 million students, of which 60% are female (Department of Higher Education and Scientific Research. Algeria, 2020). The country is also home to several research centres and institutes that are engaged in cutting-edge research in fields such as renewable energy, biotechnology, and nanotechnology.

Overall, the country's progress since independence demonstrates its commitment to investing in human capital development through higher education as the sector was and remains the cornerstone of any genuine development initiative for a country. Consequently, investing in this sector cannot be overlooked by countries aspiring to join the knowledge global community (Meziane & Mahi, 2010). However, Algeria still faces significant challenges in its higher education system and thus there is still much work to be done to fully apprehend Algeria's potential as a leader in higher education within Africa and beyond.

2.4 Types of Higher Education Institutions in Algeria

Higher education in Algeria is delivered in different types of establishments going from universities, university centres and schools. There are also Institutes of Applied Science and Technology (IAST) created within universities. Some of these establishments are to be summarised in Table 2.1 as defined by Souleh (2017).

Table 2.1

Higher Education Institutions in Algeria

Type of institution	Description	Qualification awarded
University	Large student populations which are distributed among several faculties and departments, suggested fields and branches of training, as well as training in medical and veterinary sciences.	UG/ PG Degrees
University Centre	A small university that contains few departments with few specialities built to fulfil the needs of far and isolated places.	UG/ PG Degrees
National High School	Institutions specialised in trade, management, human science and technical science. • a limited number of students. • A specialised and targeted training. • Accessed only by very highly skilled students as enrolment rates are very high.	Vocational Qualification
Normal High School	Prepare and train students to be teachers at primary, middle and secondary education only.	Vocational qualification

Preparatory School	Intensive program of a two year period to prepare students to take the test and study in the National High school.	UG Degree

Note. From (Souleh, 2017).

These establishments could also be divided in terms of being:

- Public scientific, cultural and professional establishments which are directly supervised by the Ministry of Higher Education and Scientific Research such as the university of Algiers1, University of Constantine Mentouri 1 and Oum El Bouaghi University.
- Public administrative establishments attached to other ministries but whose educational activities are supervised by the Ministry of Higher Education and Scientific Research such as the Banking graduate school that is attached to the bank of Algiers and the ministry of commerce.
- Private higher education institutions: Algeria has only 15 state-recognised private higher education institutions whose educational activities are supervised by the Ministry of Higher Education and Scientific Research and belong to the private sector such as the Hotel and Catering School and the Higher Institute of Sciences . Meyer et al. (2022) clarified that: "Private higher education institutions have only been officially recognised very recently 'as of mid-2017'. There are only 14 of them and they still represent a very small number of students and teachers" (2022, p.5). More applications to authorise the opening of private higher education institutions are under consideration. (Department of Scientific Research and Technological Development, 2019).

Furthermore, these higher education establishments have different subjects as per languages, history/geography, philosophy, mathematics, music and natural sciences. They are designed along 14 domains, namely law, sciences and technology, social sciences, foreign languages, Arabic language and literature, material sciences, mathematics and informatics, natural and life sciences, sciences of earth and the universe, sciences of economics, management and commerce, arts, sports, Amazigh (Berber) language and culture. In addition to medical studies that has a number of specialities mentioning first, medicine, then pharmacy, dentistry and lastly veterinary sciences and all of these domains are in turn divided into more branches. (Department of Higher Education and Scientific Research, 2020).

2.5 The BMD System in Algeria

After a brief explanation and description of the Algerian higher education sector, its history and reforms, I will address particularly in this section the most recent reform that underwent the Algerian higher education. The reform was based on the BMD system that was adopted in the last two decades. It is the focus of the context of the current study and the current section.

The Bachelor's – Master's - Doctorate system (BMD) was implemented from 2004 as had all the other Maghreb countries replacing the old classical system that did not respond to the main challenges imposed by the changing situation of economy, politics and society in Algeria. Hamzaoui (2021) explained that "the classical system which is consisted of four years license, two years magister and four years doctorate system, did not reply to the major challenges laid down by the changing situation of economy, of politics and of the society in Algeria" (p. 134). The system was integrated since Algeria's independence, but it did not function neither in favour of developing the quality of higher education and scientific research nor for responding to the country's situation and needs. Benziane (2004) have also pointed out to the idea that "the system as now constituted is completely lacking in preparation for conducting research"(p.111). Additionally, as Hamzaoui declared: "there was a serious disagreement between market requests, social requests and what the university produced" (2021, p. 134). Therefore, it was necessary to re-think the higher education system in Algeria and to apply major reforms to deal with the new global trends of higher education and scientific research.

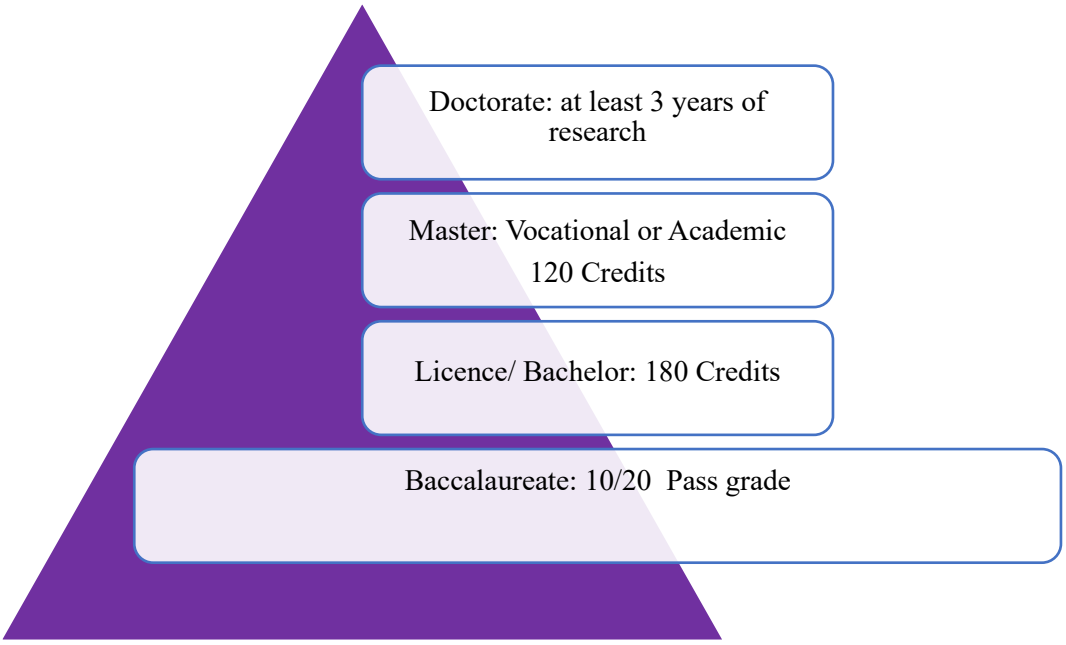
The BMD system is a set of objectives aimed at transforming higher education within the framework of the Bologna Process set on 1999. The group of European countries believed in the indispensable role of knowledge in the process of social and human development. Meziane and Mahi (2010) pointed out that: "it was deemed necessary to give citizens the necessary competencies to meet the challenges of the new millennium with an awareness of common social and cultural values that would develop a mutual social and cultural outlook" (p.270). Djebbari (2016) advocated that it was expected to improve the teaching quality according to the social and economic demand; achieve a harmony in the interactions between the university and the global developments; encourage international cooperation, mobility and diversity and lastly to lay the foundations of good governance based on consultation and participation of all parties including government, policy makers, teachers and students.

Consequently, the BMD system brought new ideas related to pedagogic practices; some of them can be summarised as follows: first, the system developed some regulations concerning assessment, student/ teacher roles and the teaching and learning approaches. Assessment became flexible and established on the grounds of either continuous/ regular control or by a final exam or a combination of the two modes of control, but priority is supposedly given to continuous evaluation. Second, the BMD system has also transformed the role of the student who was the passive agent in the learning and teaching process to become the active one whom the learning and teaching situation is centred upon. Third, it brought the Communicative approach as well to teaching which is being implemented in the Algerian university almost in all subjects and specialties (Sarnou et al., 2012).

Furthermore, and concerning the structure of the courses, teaching in the BMD higher education system became a process organised into semesters made up of teaching units where success is conditioned by the accumulation of a number of credits presented in Figure 2.1. Courses are categorised into fields of study, and a field of study is a coherent whole comprising several disciplines. Due to the large number of students, courses at university level encompass lectures as well as face-to-face seminars and some practical work instructed in Arabic language except for the foreign languages which are taught in these target languages. Independent work is also an essential component of the student's training and is assessed and graded. As the vocational programmes at the Institutes of Applied Science and Technology receive small numbers of students, practical teaching both at the institute and in the field accounts for a significant part of the courses (Education, Audio-visual and Culture Executive Agency, 2018, p.01).

Figure 2.1

The LMD: A Three Cycle System



Indeed, the BMD system was expected to be more beneficial and valuable for both students and teachers in comparison with the classical system applied during the previous years. Mainly, due to the set of objectives that aimed at offering a great number of employment opportunities, profound acquisition of English language as the world's first language and an endorsed knowledge and skills improvement in addition to internationally recognised degrees in the sense that internationalisation which indicates a series of international activities such as academic mobility for students and teachers; international collaboration, partnerships and projects; new international academic programs and research initiatives (Knight, 2008).

Despite the many reforms and achievement so far, many studies pointed out to the failure of this system. In this regard, Megnounif (2010) maintained that despite the settled ideal objectives, a number of limits are diagnosed. This denotes that the system has been unsuccessful in achieving its main goals as still the teaching and learning quality at university level is decaying. A study by Hamzaoui (2021) found that the majority of students and teachers in her research are unsatisfied with the current reforms achieved by the Algerian government and they preferred the classical system instead of the BMD one. She clarified that

her participants asserted that the BMD system focuses on their progress from one year to another and neglects their academic progress and quality training which signifies its provision of quantity rather than quality. Hamzaoui (2021) has also explained that from the participants' perspectives this system has malfunctioned in comparison with the old one because it does not open doors for job opportunities and scholarships as it has been oppositely thought at the onset of its implementation. The participants of the study worried about their professional career, low educational level and the syllabus load besides the lack of time associated with this flaw. Sarnou et al. (2012) have also advocated that the system was malfunctioning since " there was a serious disagreement between social demands, market demands and what the university produced" (p.180).

Many studies have pointed out to the idea that the system is ineffective due to massification policy that led to a massive access of higher education" (Bouchikhi & Barka, 2017). The researchers clarified that: "massification was a core part of the reform, in part motivated by the demographic reality of a large youth population, but also by explicit policy choices undertaken by the government. The application of massification policies in Algeria led to a trend of favouring quantity over quality" (Bouchikhi & Barka, 2017, p.46). Massification policies that characterise these reforms is seen as an obstacle for increasing the quality of education. In the same line of thought, Meziane and Mahi (2010) declared that: "with reforms of higher education in the early eighties, involving programs and evaluation, and in the late nineties, involving restructuring, as well as with the continuing increase in the number of students, the balance between quantity and quality began to waver; levels of student achievement started to decline, and the gap between training and market requirements progressively widened" (p.267). Another study findings have also shown that university massification has had the opposite effect by training graduates doomed to unemployment and expatriation (Noui, 2020).

This brings us to the point where we keep thinking if this system is a challenging step to academic progress of students and their professional training. The poor standards surrounding the BMD system stated earlier lead us to think about the status of critical thinking at the Algerian university particularly as many educators (Benouar, 2013; Melouah, 2017; Achoura & Merrouche, 2021) argued that critical thinking which is considered highly important is missing in reality. Many questions may rise here as about whether the methods implemented to teaching are really effective for critical thinking development? Does this system realistically foster students' critical thinking development? What are the challenges that

hinder the support of students' critical thinking development? And many more questions that need some justification.

2.6 Critical thinking within the Algerian Higher Education System

When it comes to critical thinking, there have been some theoretical claims from the government embedded within the reforms that the higher education sector underwent about making more efforts to promote this higher level skill. In the 21st century, the major concern of the higher education systems globally has shifted to preparing effective citizens who think productively in their society and in turn lead to attain innovation within the economic and socio-cultural aspects of their community (Souleh, 2014). Forbes (2018) advocated that: "critical thinking has become a central tenet of tertiary level education and often forms an explicit part of courses and assessment criteria across a wide range of disciplines" (p. 433) and hence, many scholars claimed that "it would be useful if the university offered programs providing high-quality opportunities to the students to expose themselves to conflicting frames of reference and sometimes even combining professional preparation with the development of the ability to think critically" (Karalis, Sotiropoulos, and Kampeza 2007; Karalis, 2010 as cited in Raikou and Karalis, 2016).

The world of today is developing so fast, and Algeria is no exception to follow the same path as other countries are working on helping students develop decision making, allow them the freedom to argue and be creative besides promoting their critical thinking skills (It should be noted here that it is still debated whether critical thinking is a skill or an ability as there is no agreement till now on a precise and concise definition of the concept of critical thinking. This is an issue that will be addressed more fully in the next chapter). In the context of foreign language teaching for example, a study by Melouah (2017) asserts that teachers need to consider developing students' critical thinking when designing foreign language curricula because of the close relationship between language development and thinking, besides, the teaching of critical thinking is very effective for students' achievement and success in the 21st century. Melouah (2017) also claims that "in Algeria, critical thinking has not yet been permeated across EFL (English as a Foreign Language) university curriculum and many English language classes fail to teach critical thinking" (p.9864). Moreover, a mixed-methods study by Benmouhoub and Boukhedimi (2019) that explored students' attitudes towards their teachers' assessment and their critical thinking in the field of EFL confirmed that students lack critical thinking skills: "the study findings demonstrated that the students lack critical thinking skills due to the type of assessment practice adopted in higher education, as well as

their language incompetence, shyness and fear of evaluation" (p.126). Clearly, students lack critical thinking skills in different contexts and disciplines.

Students who graduate from Algerian universities from the many different disciplines lack critical thinking skills by the time they graduate from their universities. As Djillali Benouar (2013) described that due to the lack of organisation in the public sector and the limited strength of the private sector, the country is facing a persistent issue of having an excess number of university graduates but a shortage of workers with the desired skills demanded by employers. This is evident in foreign companies operating in Algeria, who are hiring workers from their own countries instead of recruiting local individuals who lack the necessary skills, thus worsening unemployment levels. There is a mismatch between graduate competencies and labour market demands as Sarnou et al. (2012) indicated: "there was a serious disagreement between social demands, market demands and what the university produced" (p.180). This truly could be linked to the lack of other competencies and skills, yet critical thinking is still one of these essential 21st skills and competences that are lacking and this issue has become a significant concern in higher education (Melouah, 2017).

In a recent study done by Merrouche and Achoura (2021) exploring the teaching of critical thinking in the Algerian secondary school within EFL classes, the researchers investigated, in the first place, whether the teachers believe that they teach critical thinking to their learners, and they have also explored whether these teachers really teach it in their classes by comparing the results of both the questionnaire and the classroom observation conducted with 76 teachers. The results of this mixed methods study displayed a clear absence of the teaching of critical thinking although the teachers believed that they teach it. The researchers concluded that, "the findings of this study add to the existing research evidence that the teaching of critical thinking is still 'appended 'to, if not, absent in the Algerian EFL class" (2021, p.774). This clearly shows the unfortunate status of critical thinking in one of the Algerian educational contexts that is highly related to the higher education sector although the Algerian curriculum designers and policy makers set clear aims, objectives and recommendations concerning the teaching approaches to be used to help learners develop their critical thinking within the lesson planning such as posing questions, arguing, debating and comparing or using reflective and problem-solving learning and so on (Baghoussi, 2021), but expectations do not always reflect reality (Merrouche and Achoura, 2021).

when discussing the reasons why developing critical thinking is to some extent neglected at the level of university, the literature (Achoura & Merrouche, 2021; Zebbouchi & Bacher, 2021) held that it is due may be to the lack of an agreement about the concept itself as views are differing to what it means and how it should be promoted in classrooms. Ketabi et al. (2013) argued that the vast majority of teachers have very simplistic and general conceptions and lack details about what critical thinking actually means. Besides, it is due to the negligence of the policy makers and the government itself of the importance of the training provided to teachers in regard to critical thinking and its inclusion within the different forms of evaluation and student assessment. In the Algerian context, Melouah (2017) had also claimed that there is a widespread belief that, in practice, critical thinking has not been fully integrated into the curriculum particularly in the EFL classes. It has not been established as a separate subject or incorporated into the teaching methods. Other researchers pointed out that "we cannot aspire to see good future critical learners without good critical teachers, but at the same time, teachers alone cannot take this responsibility since it is shared by every member of the educational community" (Achoura &Merrouche, 2021, p.774).

For the highly advocated importance of critical thinking, developing students' critical thinking should be the benchmark of higher education considering that the productive and effective citizens are the ones who have succeeded to develop their critical thinking (Marin & Halpern, 2011). The development of students' critical ability is seen as a means of empowerment, not just within students' careers in higher education, but for life beyond (Harvey & Knight, 1996 as cited in Walker & Finney, 2006). The hope is that autonomous and independent individuals able to engage in critical thinking will build a better world through predetermined plans and redefined perspectives (Mezirow, 2006).

Overall, critical thinking situation within the Algerian higher education is still struggling; therefore, there is a need for educators to understand this concept first to be able to support promoting students' critical thinking skills for the benefit of their society's needs. Henceforth, the Algerian higher education is one of these many systems that should make huge efforts to achieve this prominent goal to produce graduates who are capable of thinking critically and creatively for solving complex problems and contributing to the development of their communities.

2.7 Conclusion

The chapter presented the background for the current study by showcasing the Algerian higher education and the reforms that underwent the system besides exploring the state of critical thinking in this context. Clearly, fostering critical thinking is still a difficult process for higher education in Algeria. Yet, it is important to recognise the value of critical thinking and its potential to improve the quality of education in Algeria. By prioritising critical thinking in higher education, Algeria can equip its students with the skills necessary to succeed in a rapidly changing global economy and contribute to the development of a more prosperous society. Thus, efforts should be made to promote critical thinking skills among students and educators alike. Yet, let us first investigate critical thinking particularly as it is a debatable and complex concept. The next chapter then will be a review of the literature discussing critical thinking and the surrounding debates.

Chapter Three: Critical Thinking: A Literature Review

3.1 Introduction

The literature (Keighley & Browne, 2013; Ennis, 2016; Indrasiene et al., 2019) suggests that critical thinking contributes to the development and success of the individual academically as well as throughout daily life experiences. While there is no shortage of scholarship on critical thinking, there appears to be no widely accepted definition of the concept(Sanders & Moulenbelt, 2011). Many researchers tried to explain the underpinning discussions around critical thinking as to how scholars define critical thinking and in what ways they conceptualise it. "Despite more than four decades of dedicated scholarly work 'critical thinking' remains as elusive as ever" (Davies, 2015, p.41). In spite of that, research in the field settled on the idea that critical thinking is seen as an amorphous concept difficult to mould in one single definition. A scholar suggests that "academics are not always so clear about what the concept means, and also not so certain about how the idea is best conveyed to students in their studies" (Moore, 2013, p. 506). In part, this is because critical thinking is highly complex in nature (Moon, 2008), and in part because scholars exploring critical thinking come from academic disciplines which differ greatly in theory and practice namely, philosophy, education, history, cultural studies and psychology.

The situation has been also described by Atkinson who stated that "academics normally considered masters of precise definition seem almost unwilling or unable to define critical thinking. Rather, they often appear to take the concept on faith, perhaps as a self-evident foundation of western thought – such as freedom of speech" (1997, p.74). Undeniably, there are different approaches to define critical thinking and a number of them will be discussed in this chapter. This chapter will explore the following issues as well: Is critical thinking an individual attribute or a social aspiration? Is critical thinking discipline- specific? What does critical thinking in higher education involve? What are its dimensions? How could critical thinking be developed at the level of university? And what barriers are believed to hinder students developing their critical thinking ending with a conclusion to sum up the discussions contemplated.

The chapter will be comprehensive to cover enough data about critical thinking. The comprehensiveness of the literature review in my current study on critical thinking in the Algerian higher education context is justified first by the need to provide a comprehensive understanding of the topic and its relation to education as a whole and second by the necessity

of acknowledging the importance of decolonising critical thinking. This is to avoid the sole reliance on Eurocentric views of the concept of critical thinking.

First, I aim to present a holistic view of critical thinking for the concept has been widely emphasised in the field of education and higher education interrelatedly. The comprehensiveness of my literature review will then serve multiple purposes by providing a broad perspective on critical thinking in higher education, establishing a solid foundation for my research and contextualising critical thinking within the field of education. This comprehensive approach ensures that my thesis encompasses diverse perspectives and provides a well-rounded understanding of the topic. Moreover, critical thinking is not limited to one specific discipline or domain; it permeates various fields within higher education. Therefore, by including literature from diverse disciplines such as sociology, nursing or business studies that discuss critical thinking within their respective contexts, I can highlight its relevance across disciplinary boundaries. By incorporating such literature into my thesis, I ensure that it encompasses a wide range of ideas and insights while demonstrating its significance in enhancing teaching and learning practices in higher education institutions.

Second, it is essential to review and incorporate diverse perspectives to ensure a more comprehensive approach to critical thinking in higher education, and this is because we do not necessarily have to accept ideas about critical thinking developed in Eurocentric cultures. It is important to consider that Eurocentrism refers to the dominance of European culture and history evidenced in its achievements in economy, politics, technology, and the high quality of life enjoyed by its societies (Sundberg, 2009). Eurocentrism is seen as "a set of empirical beliefs that frame Europe as the primary engine and architect of world history, the bearer of universal values and reason, and the pinnacle and therefore model of progress and development" (Sundberg, 2009, p. 638). Littlewood (1999) pointed out to the idea that we have to be cautious against the presupposition that specific notions and practices in the West must also be appropriate or fitting to east Asia or other contexts. In our context, such thoughts could influence the way critical thinking is taught and understood.

A study by Tan (2017) indicated that we should "refrain from imposing or assuming a predetermined or universal conception of critical thinking for a particular cultural context" (p, 998). This implies the need to decolonising thoughts about critical thinking. In the current study, I opted for a comprehensive review to decolonise critical thinking since the concept of critical thinking is often framed within Eurocentric viewpoints which emphasise independent

and discerning judgment (Tan, 2017) and that the higher education institutions are calling for a decolonisation agenda as part of key reforms which take decolonisation works in education as a critical assessment, contextualisation and challenge of the dominant viewpoint and traditions of curriculum knowledge (Gandolfi & Rushton, 2022). For that reason, Tan (2017) advocated that it is appropriate, in researching critical thinking in Asia or any other context "to understand the local culture, how culture interacts with and mediates the learning and expression of critical thinking, and how educators exercise their agency to advance critical thinking in schools within existing socio-cultural constraints" (p.989). In this essence, critical thinking needs to be reviewed from a decolonial point of view where "decolonisation is about transformative change to fundamental assumptions and practices about how we treat one another, how we understand knowledge and how we value and reward both student and staff achievements"(McArthur, 2022, p.1690).

Decolonisation also draws upon understanding the interrelated yet distinct work taking place locally and worldwide, between seeking diversity in academia, as well as moving beyond it (Ahmed & Swan, 2006). Decolonising critical thinking is crucial as it challenges the dominance of western perspectives to recognise diverse knowledge systems and marginalised voices in academia and society (De Saxe & Trotter-Simons, 2021). Decolonisation helps in the exploration of alternative ways of understanding and interpreting the world which is the case of the current study as it involves understanding different viewpoints regarding critical thinking definition and development. "Decolonisation work does this by amplifying and disseminating the knowledge and perspectives of peoples that curriculum knowledge has historically silenced and marginalised" (Moncrieffe, 2022, p.2).Therefore, decolonising critical thinking promotes a deeper understanding of the concept and necessitates a comprehensive review as part of the studied context.

The chapter then will be a comprehensive review of literature concerning critical thinking in which the next sections will then be dedicated to introducing critical thinking historical background, definitions, dimensions, critical thinking in higher education, its importance, development and barriers. Each will be discussed thoroughly and respectively.

3.2 History of critical thinking

Critical thinking as a word is rooted in ancient Greek; it derives etymologically from two words: "kriticos" (discerning judgment) and "kriterion" (standards) which implies the

development of "discerning judgment based on standards. The teachings of Socrates were thought pioneering in the debates underpinning critical thinking (469-399 BCE) where he formulated a method of probing questions and justifying claims to knowledge seeking evidence through logic which is nowadays known as Socratic questioning. For that reason, Socrates is considered the father of critical thinking.

Following Socrates' teachings, Plato, Aristotle, and other Greek philosophers continued in the critical thinking debates; they have also emphasised the need to prepare and train the mind for understanding the deep realities of life (Paul et al., 1997). Then in the Renaissance (15^{th} &16^{th} Centuries), many researchers recognised the necessity of a systematic founded reasoning starting from Francis Bakon in England to Descartes in France and Machiavelli in Italy (Ricci & Su, 2013). Afterwards, several scholars in Europe began to explore critical thinking in relation to disciplines such as: religion, art, society, human nature, law, economy and politics. They proceeded with the assumptions of the ancients with the belief that egocentric views of world must be abandoned in favour of views based entirely on carefully gathered evidence and sound judgement. After centuries, many scholars extended further the conception of critical thought recognising its power and hundreds of thinkers from different disciplines have contributed to its development (Paul et al., 1997).

Consequently, and following the ancients' teachings and the contributions of numerous scholars afterwards, more critical thinking research and debates were initiated starting from Dewey's philosophy of thinking which was developed the beginning of the 20^{th} century (Dewey 1916, 1938). The definition of critical thinking as we know it today goes back to John Dewey (Dellantonio & Pastore, 2021). "Critical thinking then is defined by Dewey (1910) as active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (p.6). This signifies that it aims to a well-founded judgment utilising appropriate evaluative standards in the attempt to determine the value of something. The importance of developing children's thinking skills has increased due to the increase of the complexity and shifting realities of modern life where the need for generating new knowledge, comprehension, judgment, and evaluation skills in order to deal with job market requirements have augmented as well (Alwadai, 2014). However, it was until the 1950's that educators began to teach critical thinking skills in the classroom as an integral component of the curriculum (Bataineh & Alazzi, 2009). Later on, the 21^{st} century knew a multitude of research underpinning critical

thinking because it was seen among the essential core life skills (Smith, 2002.; Alwadai, 2014).

For explaining such a concept, the literature provides several definitions to critical thinking; some of them are sharing to a greater extent similar content, but others differ greatly. In this section, some of these prevalent conceptualisations of critical thinking will be presented. These conceptualisations include Blooms' taxonomy, the skills and disposition views, other influential and prominent definitions of critical thinking and lastly definitions based on the Islamic perspective.

3.3 Critical thinking defined

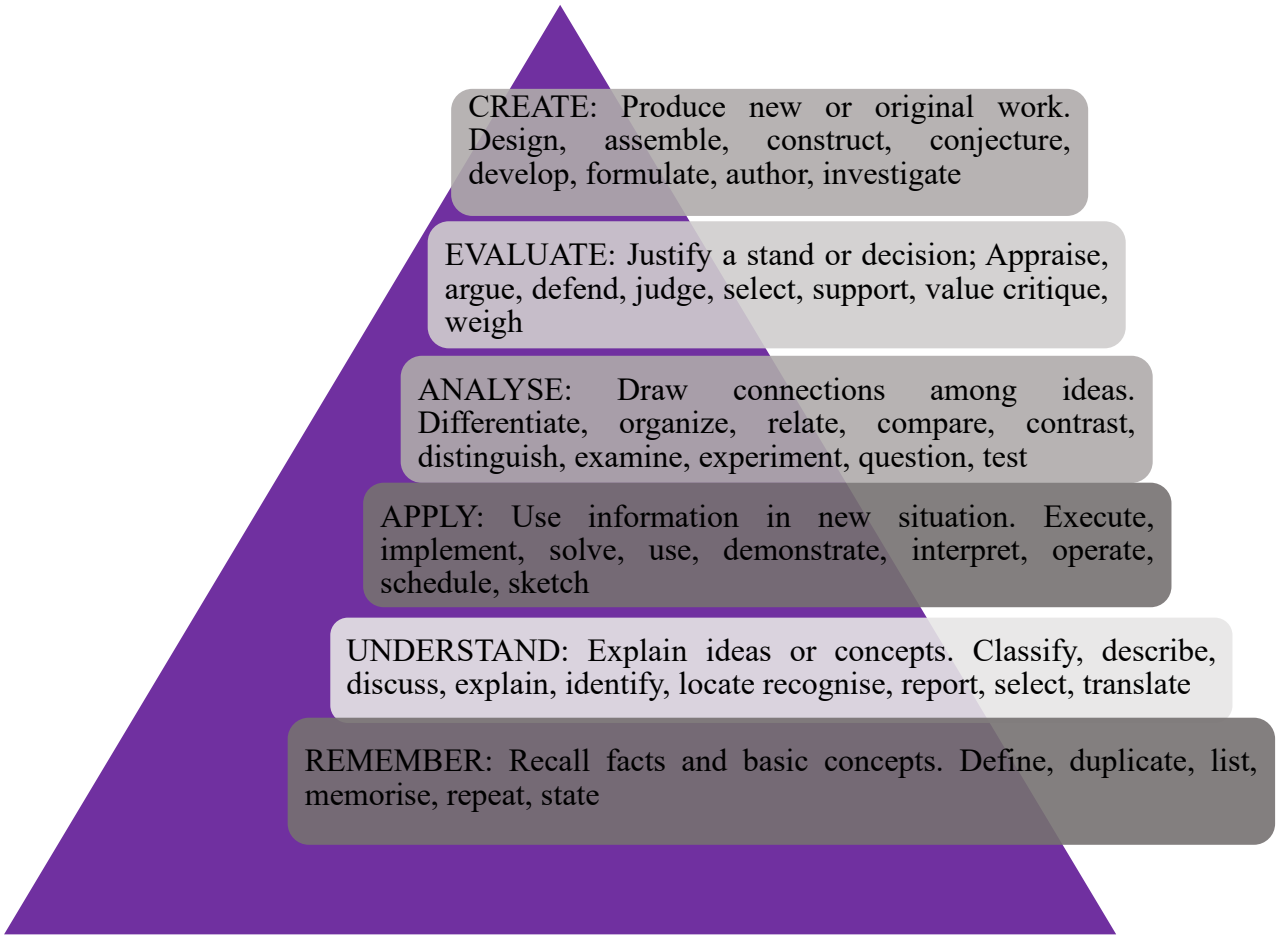
3.3.1 Bloom's Taxonomy

First, it is worth mentioning the influential works of Benjamin Bloom in relation to critical thinking and particularly Bloom's taxonomy that was developed in 1956 where he chaired a committee to outline educational objectives and assessments for institutions to implement. It is a framework for categorising educational goals and objectives into different levels of complexity and specificity and is often used by educators to design learning objectives and assessments that align with specific levels of cognitive complexity. By doing so, they can ensure that students are challenged appropriately and have opportunities to develop higher order thinking skills. The taxonomy is composed of three functional categories: *cognitive, affective* and *psychomotor*. *T*he current study is primarily concerned with the first category, the cognitive one which in in turn classified into six subcategories : knowledge, comprehension, application, analysis, synthesis and evaluation.

In this regard, Bloom (1956) defined critical thinking as the ability to effectively use a set of the six skills when encountering a new situation. The higher levels of critical thinking, such as analysis, synthesis, and evaluation are often considered to be the most important aspects of critical thinking and each of the six levels builds on the previous one (Stayanchi, 2017). In simpler terms, in Bloom's taxonomy, critical thinking involves being able to think critically and creatively in order to solve problems and make informed decisions. It requires the ability to analyse information, synthesise ideas from multiple sources, and evaluate evidence in order to draw conclusions. Figure 3.1 explains the six levels of Bloom's taxonomy and what they include precisely.

Figure 3.1

Bloom's Taxonomy(1956) summarised (Adapted from Anderson & Krathwohl, 2001)



The taxonomy appeared to be useful and significant for its elegance, simplicity, and versatility as indicated in the works of Nentl and Zietlow (2008). They explained that the taxonomy is elegant and simple due to the occurrence of the learning process in linear and hierarchical patterns. This implies that simplistic learning such as concrete knowledge, comprehension, and application must necessarily occur before learners can engage in more sophisticated and creative learning such as analysis, synthesis, and evaluation. The versatility, however, is seen in its application for all levels of education as well as across the disciplines. yet, the taxonomy has been revised several times since then and was so much criticised. For instance, Amer (2006) and Startalk (2009) highlighted that the current world differs greatly from the time when Bloom developed his taxonomy in 1956, as educators now have a better understanding of how learning occurs and what elements it involves and how educators should

deliver their lectures. As a result, it is evident that the taxonomy has limitations and there is a need for a more suitable framework for a learner centred approach.

Hyder and Bhamani (2016) have also indicated that the taxonomy was critiqued by inspecting its implications on segmentation of knowledge application into a hierarchical model which may limit learners, particularly those in higher education, restrain their acquisition of a concept and impede students' learning and motivation while undergoing such an intensive, structured assessment of those learning outcomes. Moreover, the taxonomy was criticised for it oversimplified the nature of thought and its relationship to learning as observed clearly in the diagram above (Furst, 1994 as cited in Soozandehfar & Adeli, 2016). Still, Bloom's taxonomy is the most influential among the teaching philosophies until today (Soozandehfar & Adeli, 2016).

3.3.2 Critical thinking: the cognitive and dispositional dimensions

Other than the conceptualisation provided above (Section 3.3.1) in bloom's taxonomy, other classifications with the aim to define critical thinking have emerged. Davies and Barnett (2015) claimed that the definitions of critical thinking could be grouped into two broad categories: cognitive elements including argumentation, inference making, and reflective judgment and propensity elements including dispositions, abilities, and attitudes. These categories will be explained thoroughly and respectively in the next sections.

3.3.2.1 The skill-based view of critical thinking

A number of researchers claim that critical thinking can be approached as a set of cognitive skills used in "solving problems, formulating inferences, calculating likelihoods, and making decisions" (Halpern, 2014, p.8). Scholars such as Walker and Finney (2006) in (Hammersley-Fletcher & Hanley, 2016) see critical thinking as "a process of continuously testing and refining hypotheses, a process of engaging in falsification in order to arrive at a reliable truth"(p.981). Whilst this view is valuable for explaining how ideas become refined through logical processes, critical thinking might be reduced to a merely technical procedure, overlooking its sensitivity to its context. Critical thinking is also seen as "a skilful, responsible thinking that facilitates good judgment" (Lipman 1988, p.39) and as "thinking aimed at forming a judgment" (Bailin et al., 1999, p.287). Abrami et al. (2015) added that "critical thinking (CT) is purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanations of the considerations on which that judgment is based" (p.275). The cognitive dimension of critical thinking emphasises logical thinking through the use of a range of skills where an individual attempts to understand a

problem and to come up with reasonable solutions or decisions to be made. This dimension has been the most researched and there are numerous instruments dedicated to its measurement (Sosu, 2013).

The skills dimension of critical thinking implies the ability to understand problems and develop reasoned solutions to them (Sosu, 2013). Butterworth and Thwaites (2013) emphasised that critical thinking is not only directed at arguments; it also incorporates items of evidence, statements, assertions, explanations, dialogues, statistics, news stories, etc. Thus, the cognitive critical thinking skills noted involve interpretation, analysis, inference, explanation, evaluation, and some element of metacognition or self-regulation (Halonen 1995, pp. 92–93). Davies and Barnet (2015) used a framework designed by Wales and Nardi (1984) to classify these skills under four main categories which are summarised in Table 3.1 (see Table 3.1).

Table 3.1

Cognitive Thinking Skills

Lower level thinking skills	**Higher level thinking skills**	**Complex thinking skills**	**Metacognitive skills**
Foundation thinking	Thinking skills	Complex thinking	Thinking about thinking
• Interpreting • Identifying assumptions • Asking questions for clarification	• Analysing claims • Synthesising claims • Predicting	• Evaluating arguments • Reasoning verbally • Inference making • Problem solving	• Metacognition • Self-regulation

Note. From (Davies & Barnet, 2015).

Kuhn (1999) also recognised critical thinking as metacognition that focuses on specific intellectual skills and involves cognitive and metacognitive competencies. For Kuhn,

metacognition is essentially important in the process of learning. Moreover, based on Paul and Elder (2005) thoughts, Mulcahy (2008) indicated that a critical thinker is skilled in three dimensions: analytic, evaluative, and creative thinking. He also believes that "critical thinking is also a process whereby a person reflects upon his/her own thinking process so as to create clear, well-reasoned ideas for the benefit of him/herself and others" (Mulcahy, 2008, p.17).

Seemingly, critical thinking is more than good thinking or reflecting on your thinking. This subset of the cognitive skills is a complex process that implicates questioning, evaluating, changing viewpoints and calculating possibilities and above that deciding on new actions. However, these definitions are somewhat limiting by not necessitating for any commitment to action on the part of the critical thinker i.e., its application and practice (Davies & Barnett, 2015).

3.3.2.2 Critical thinking as dispositions

Interest in the dispositional dimension of critical thinking, as opposed to the skill dimension, is rather a recent phenomenon (Darby & Rashid, 2017). However, there is now evidence relating the disposition towards critical thinking to the use of higher-order thinking skills in problem solving (Alvarez-Huerta et al., 2022). One of the leading scholars in the field of critical thinking research is Robert Ennis. His works inspired so many contributions to the literature concerning critical thinking definition, models and assessment. Ennis (1980) considers critical thinking as a reasonable reflective thinking focused on deciding what to believe or do; accordingly, the ideal critical thinker can be characterised by interdependent and overlapping sets of twelve dispositions and eighteen abilities which constitute a streamlined conception (Davies & Barnett, 2015). It is worth noting that the ability to think critically is different from the disposition to do so (Ennis, 1985). The dispositions are different from skills in that they are seen as personal attributes or attitudes (Dewey, 1933) and unlike skills, dispositions cannot be taught but are nurtured through modelling activities (Reece, 2002, cited in khatib & Shakouri, 2013). These dispositions are also described as a nexus of attitudes, intentions, values, and beliefs which distinguish one's character or personality which implies that they work as a person's consistent internal motivation to act toward, or to respond to persons, events, or circumstances in habitual, and yet potentially malleable, ways. Dispositions are not arguments or judgments, but affective states. They include critical thinking attitudes and a sense of psychological readiness of the human being to be critical (Facione et al., 2000).

The dispositions described in Ennis's definition modified including the critical thinking abilities have been over the years for precision only without any change of the basic ideas. They are summarised in Table 3.2 and Table 3.3.

Table 2.2

Critical Thinking Dispositions

Number	Disposition
1.	Seek and offer clear statements of the thesis or question,
2.	Seek and offer clear reasons,
3.	Try to be well informed,
4.	Use credible sources and observations, and usually mention them,
5.	Take into account the total situation
6.	Keep in mind the basic concern in the context,
7.	Be alert for alternatives,
8.	Be open-minded a. seriously consider other points of view b. withhold judgment when the evidence and reasons are insufficient,
9.	Take a position and change a position when the evidence and reasons are sufficient,
10.	Seek as much precision as the situation requires,
11.	Try to "get it right" to the extent possible or feasible, and
12.	Employ their critical thinking abilities.

Note. From Ennis (1991).

Table 3.3

Critical Thinking Abilities

Number	Abilities
1.	Have a focus and pursue it
2.	Analyse arguments
3.	Ask and answer clarification questions
4.	Understand and use graphs and maths
5.	Judge the credibility of a source
6.	Observe and judge observation reports
7.	Use their background knowledge, knowledge of the situation, and previously established conclusions
8.	Deduce and judge deductions
9.	Make and judge inductive inferences and arguments (both enumerative induction and best-explanation reasoning)
10.	Make and judge, value judgments
11.	Define terms and judge definitions
12.	Handle equivocation appropriately
13.	Attribute and judge unstated assumptions
14.	Think suppositionally
15.	Deal with fallacy labels
16.	Be aware of and check the quality of their own thinking (metacognition)
17.	Deal with things in an orderly manner
18.	Deal with rhetorical strategies

Note. From Ennis (1991)

On this basis, Ennis (2016) urges further development of critical thinking teaching, assessment, and curriculum and he insists not only on the development of a course focused on general critical thinking abilities and dispositions, but also on the infusion of general critical thinking in subject-specific courses and promoting subject-specific critical thinking dispositions and abilities. Ennis's (1992) distinction between dispositions and abilities is useful in characterising the field of critical thinking. In terms of dispositions, critical thinkers are concerned by whether their beliefs are true, and their decisions are justified; their positions are reasonable, honest, and clear; and that others' views and feelings are respected. In terms of abilities, critical thinkers have the skills to clarify; justify the basis for decisions; infer, both deductively and inductively; make suppositions; and approach problems with equanimity, due sequence, and propriety with regard to rhetorical strategy. Thus, based on the works of Ennis, we can infer that critical thinking is central to taking a stand and judging issues. Henceforth, it suggests being cautious about accepting others' ideas and questioning our understanding of things especially those taken for granted. Critical thinking encourages not only challenging our ideas, but also an effort to produce and develop new ones. By getting involved with an original viewpoint and think critically about it, one can come to different conclusions and make an original contribution to this knowledge having instilled principles of reason and logic specific to the discipline.

Ennis's theory demonstrates the significance and practical power of critical thinking. It was modified over the years, but the basic ideas have not changed so far. Yet, in disagreeing with the approach of Ennis for critical thinking, opponent scholars are cautious about claims of that kind and favours identifying critical thinking as providing a tentative scepticism rather than a justification of a set of beliefs or tools for making judgments and action (Lipman, 2003). "Ennis's work, while substantial, suffers from an inattention to knowledge production and invention as, first and foremost, rhetorically constituted" (Rademaekers & Detweiler, 2019, p.6). This suggests that although Ennis's work is significant, yet it neglects to acknowledge that the production and invention of knowledge are fundamentally shaped by rhetoric. His contributions to critical thinking research have advanced discussions in higher education from vague generalisations to a well-defined framework that can be incorporated into curricula (Rademaekers & Detweiler 2019).

3.3.2.3 The skills plus the disposition view of critical thinking

A more recent standpoint which combines different elements from other definitions of critical thinking suggests that the concept is a combination of "the propensity and skills to engage in activity and 'mental activity' with reflective scepticism focused on deciding what to believe or do" (Fasko, 2003, p. 8). Critical thinking then is seen in terms of a combination of skills, knowledge, and attitudes including cognitive and affective features (Facione 1990; McPeck 1981; Paul 1981). This view of critical thinking necessitates that both the propensity and skills elements should work together for critical thinking to be exercised because each of these elements does not occur in isolation. McPeck (1981) suggested that "one must develop the disposition to use those skills" (p.3). This denotes the importance of the two facets of critical thinking: namely, dispositions and skills. A strong overall disposition towards critical thinking is fundamental for insuring the use of critical thinking skills outside the narrow instructional setting (Facione et al, 2000). "If we want our students to be both willing and able to engage in critical thinking, and we do, then we have to include both in school and professional development curricula in our instructional assignments, and in our educational outcomes assessments. Why? Because being skilled does not assure one is disposed to use CT. And, being disposed toward CT does not assure that one is skilled" (Facione, 2000, p.35).

Consequently, a number of empirical studies exploring critical thinking dispositions have emerged over the las decade. Bataineh and Alazzi (2009), in developing a workable definition of critical thinking relied on Glaser's inventory (1941) of critical thinking comprising of three elements. These components are: "an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience, knowledge of the methods of logical inquiry and reasoning, and lastly, some skills in applying those methods" (Bataineh & Alazzi, 2009, p.58).

In his study aiming to develop a critical thinking disposition scale and to evaluate its psychometric properties, Sosu (2013) argued that the dispositions to think critically have been associated with improved academic performance, deep learning, good professional practice, professional expertise, anxiety, ego-resilience and overcoming cognitive bias in reasoning programs (El-Sayed et al., 2011; Fahim et al., 2010). Yet, Sosu also declared that this growing interest in thinking dispositions has not extended to issues exploring their assessment or measurement despite the high importance of such studies in determining the relationship between the dispositions and the success of such programs. Sosu (2013) denoted that several

classifications of important critical thinking dispositions have been described in the literature deriving from theoretical proposition to define critical thinking as dispositions. Among these taxonomies, some prominent ones are summarised in the table below (see Table 3.4).

It should be noted that the rationale behind such description of different taxonomies is that by studying multiple classifications, we can gain a more comprehensive understanding of the various aspects and components of critical thinking and help ourselves develop a broader range of dispositions across various domains. We will also be able to identify their strengths and weaknesses more accurately, allowing us to focus on areas that need improvement (Sosu, 2013). Moreover, this variety of classifications allows researchers and academics to compare and contrast different frameworks, theories, or models of critical thinking dispositions which in turn helps advancement in the field by identifying commonalities, differences, or gaps in existing knowledge.

Table 3.4

Taxonomies of Important Thinking Dispositions

Author	Year	Number of dispositions	Examples
APA Delphi Report	1990	19	Inquisitiveness; well-informed; alertness to use critical thinking ; trust in reasoned inquiry. Self-confidence in one's own ability to reason; open-mindedness; flexibility in considering alternatives; understand opinions of others; fair-mindedness. Honesty in facing own biases; prudence in making judgments; revise views where change is warranted; clarity in stating concern; working with complexity; diligence in seeking relevant information; reasonableness in selecting and applying criteria; focusing attention on the concern at hand. Persistence in face of difficulties and precision.
Facione and Facione	1992	7	Inquisitiveness; open-mindedness; systematicity; analyticity; truth-seeking. critical thinking self-confidence; maturity
Perkins, Jay, and Tishman	1993	7	Broad and adventurous; sustain intellectual curiosity; clarify and seek understanding; planful and strategic; intellectually careful; seek and evaluate reasons; metacognitive
Halonen	1995	5	Tentativeness, scepticism; tolerance of ambiguity; appreciation of individual

			differences; regard for ethical practices
Ennis	1996	12	Seek alternatives and be open to them; endorse a position when it is justified to do so; well-informed; consider other points of view; clear about intended meaning; determine, and maintain focus on, the conclusion or question; seek and offer reasons; take into account the total situation; reflectively aware of own beliefs; discover and listen to others' view and reasons; take into account others' feelings and level of understanding; be concerned about others' welfare
Halpern	1998	5	Willingness to engage in and persist at a complex task, habitual use of plans and the suppression of impulsive activity; flexibility or open-mindedness. willingness to abandon non-productive strategies in an attempt to self-correct. awareness of social realities so that thoughts can become actions.

Note. From (Sosu, 2013)

It should be clearly noted from observing the table, three major points to consider: the differences in the number of dispositions in each taxonomy, some shared characteristics of the dispositions identified by the different taxonomies and the prevalence of the notions of open-mindedness, intellectual curiosity, and reflective thinking in the different taxonomies (Sosu, 2013). Sosu (2013) argued that the number and characteristics of dispositions identified in different taxonomies can vary based on the specific framework or model being used. Each taxonomy may focus on different aspects of dispositions, leading to differences in the traits identified. For example, one taxonomy may prioritise scepticism and inquisitiveness, while

another may emphasise open-mindedness and tolerance. Additionally, the prevalence of notions like open-mindedness, intellectual curiosity, and reflective thinking can also vary among taxonomies. Some may explicitly highlight these qualities as essential dispositions, while others may incorporate them within broader categories. Overall, these variations highlight the importance of considering the goals and perspectives underlying each taxonomy when examining dispositions. Importantly, this variety provides a lens through which to understand and cultivate desired dispositions. Educators and researchers can choose the taxonomy that aligns best with their goals, context, and theoretical framework. In doing so, still, the debate about dispositional aspects of critical thinking is continuing.

3.3.3 Prominent definitions of critical thinking

Based on the thorough literature in the field of critical thinking, this concept is understood and explained from different viewpoints. According to Vandermensbrugghe (2004), there are two main perspectives on defining critical thinking. The first perspective views critical thinking as the ability to logically reason and evaluate different forms of knowledge. The second perspective sees critical thinking as the ability to question and challenge established knowledge and societal norms. The latter definition of critical thinking is rooted in Marxist ideology, which encourages critical thinking to challenge established knowledge and societal structures as it aims to analyse historical and social contexts to uncover instances of exploitation within societies. Similarly, Brookfield reported: “critical thinking is about taking democracy seriously; it is about identifying and challenging assumptions and exploring and imagining alternatives” (1987, p.15). Benesh (1993) also argued that critical thinking is a search for the social, historical, and political roots of conventional knowledge and an orientation to transform learning. Fisher (2001) claims that critical thinking is a skilful activity which meets several intellectual principles.

Chen and Rattray (2017) have suggested a working definition of critical thinking based on Baxter Magolda’s model of critical thinking which can be summarised as the development of knowledge from absolute to contextual knowing, the ability to work with complex ideas and provide thorough justifications, the capacity to consider alternatives and solve problems, a productive cognitive and emotional activity, a purposeful learning process that relates knowledge to its context, and a concept tied to reflective thinking and metacognition.

Moreover, some definitions of critical thinking mark the socially rooted views that consider critical thinking as an imperative element for greater awareness, consciousness raising, emancipation and promoting social justice. These have been emphasised for several

decades by critical pedagogy (Freire, 2009; Giroux, 1988). As indicated by Mahmoudi et al. (2014), Freire emphasises the role of critical thought to eliminate deprivation and injustice from societies believing that the development of an educational plan, which is in line with the emancipation education, can hopefully pave the way for a basic evolution in education. Freire's belief then emphasised that teaching should challenge students to scrutinise power structures and patterns of inequality within the status quo. Therefore, Freire sees critical thinking not only as the ability to develop a critical perspective on the world, but also to take action to transform oppressive structures (Giroux, 2010). This definition highlights the importance of being aware of power imbalances and encourages individuals to think critically about how these structures influence individuals' thoughts and actions to gain a deeper understanding of social issues and work towards social equity. However, critical thinking encompasses more than just examining power structures, so a comprehensive definition should include various aspects. Thus, considering multiple perspectives is crucial for a thorough understanding of critical thinking.

3.3.4 Critical thinking from an Islamic perspective

The context of this study involves Algeria, which is an Islamic society, this is from where stems my interest in reviewing the literature that showcases Islamic perceptions of critical thinking; moreover, Islam brings non-Eurocentric views i.e. a decolonial perspective that might bring different ontologies and goes along with the study decolonial approach. Critical thinking is indeed a requisite aspect in non-western thought and in Islamic societies likewise, as Alnofaie (2013) indicated: "the concepts of critical and creative thinking do exist in Islam…During periods when Islam was flourishing, it did in fact open doors to critical thinking and creativity and claims that this type of thinking is limited to Western contexts are grossly exaggerated" (p. 33). In Islam, believers are encouraged to question and analyse information before accepting it as truth. Critical thinking is not only encouraged but also seen as a means of strengthening one's faith and deepening one's understanding of Allah's wisdom and guidance.

In the Quran, that it is "Allah's word sent down to Muhammad (peace be upon him) for guidance and worship" (Deraz, 1957), Allah repeatedly urges Muslims to use their intellect and reason to understand His message and the world around them. Zhaffar et al. (2016) stated that: **"**the concept of critical thinking is based on the verses of the Qu'an which encourages thinking through the clarification of Ulu Albab features (Al-Qur'an, 3: 190-191), the

prohibition to follow without reasonable excuse (Al-Qur'an, 5: 104), prohibition to accept news without checking their authenticity (Al-Qur'an, 49: 6) and a directive to bring or produce solid evidence as the nature of truthful person (Al-Qu'an, 27:64)" (p.282).

El-Akkad (2013) maintained that all religions mentioned thinking and mind only implicitly, but Islam explicitly emphasised and commended it as a great activity that should be used in every matter. The Holy Quran has plenty of examples for teaching essential processes of thinking and knowledge for training and education, but also, these readers would comprehend situations concisely for leaning the development of a persuasive critical argument to reject the naïve blind acceptance of authority. Almalki (2019) indicated that critical thinking in the Quran encompasses the ability to reason, reflect on, and consider an account, making a conclusion or resolving a problem. it could be characterised by its consideration of evidence, evaluation of the credibility of sources, examination of proposed evidence, the avoidance of generalisation and lastly objectivity in making judgements. These characteristics could be seen in table below (see Table number 3.5) as they exemplify how the holy Quran urges both people and Muslims particularly to think and to be critical in judging what they see, hear, do and believe. It also condemns those who fail to engage in critical thinking in their quest for understanding the truth about the Creator, His Prophets (peace be upon them), the universe, and the concept of resurrection (Almalki, 2019).

In his study, Malik (2017) indicated that Quran discourages belief and acceptance of superstitions, wishful thinking, doubt, conjecture and unfounded guessing. Yet, it encourages critical thinking through Contemplation (*tafakur),* reflection (*tadabbur*), understanding (*tafaqquh*), and reasoning (*taakul*). These concepts are mentioned in the Quran in various morphological forms, but all of their nature refer to understanding, analysing, conceptualising, and being critical where reasoning has been mentioned more than any of the above terminologies referring to being critical. Quran states: "those who, when they are admonished with the signs of their Lord, droop not down at them as if they were deaf or blind" (The Quran, 25: 73). Table 3.5 shows some examples of verses from the Quran urging people to think critically through the different morphological forms shown above .

Table 3.5

Critical Thinking in the Quran

CONTEMPLATION	
Reflecting upon creations of Allah	"Men who celebrate the praises of Allah, standing, sitting, and lying down on their sides, and contemplate the (wonders of) creation in the heavens and the earth, (With the thought): "Our Lord! not for naught Hast Thou created (all) this! Glory to Thee! Give us salvation from the penalty of the Fire." The Quran, 3:191. "If it had been Our will, we should have elevated him with Our signs; but he inclined to the earth and followed his own vain desires. His similitude is that of a dog: if you attack him, he lolls out his tongue, or if you leave him alone, he (still) lolls out his tongue. That is the similitude of those who reject Our signs; So, relate the story; perchance they may reflect." The Quran, 7:176. Do they not look at the camels, how they are made? And at the sky, how it is raised high? And at the mountains, how they are fixed firm? And at the earth, how it is spread out? Therefore, do thou remind for thou art one to remind." (Quran 88: 17-21)
Reflecting on parables and stories	"The likeness of the life of the present is as the rain which We send down from the skies: by its mingling arises the produce of the earth-which provides food for men and animals: (It grows) till the earth is clad with its golden ornaments and is decked out (in beauty): the people to whom it belongs think they have all powers of disposal over it: There reaches it Our command by night or by day, and We make it like a harvest clean-mown, as if it had not flourished only the day before! thus do We explain the Signs in detail for those who reflect" . The Quran, 10:24.

Self-reflection and group reflection	"Say: "I do admonish you on one point: that ye do stand-up before Allah,- (It may be) in pairs, or (it may be) singly,- and reflect (within yourselves): your Companion is not possessed: he is no less than a warner to you, in face of a terrible Penalty." The Quran, 34:46.
REFLECTION	
reflecting on the Quran itself as a divine text	**"**Do they not consider the Qur'an (with care)? Had it been from other Than Allah, they would surely have found therein Much discrepancy." The Quran, 4:82. "Do they not ponder over the Word (of Allah), or has anything (new) come to them that did not come to their fathers of old?" The Quran, 23:68. "(Here is) a Book which We have sent down unto thee, full of blessings, that they may mediate on its Signs, and that men of understanding may receive admonition" The Quran, 38:29. "Do they not then earnestly seek to understand the Qur'an, or are their hearts locked up by them?" The Quran, 47:24.
UNDERSTANDING	
AS A HIGHER STAGE OF KNOWING	"Nor should the Believers all go forth together: if a contingent from every expedition remained behind, they could devote themselves to studies in religion, and admonish the people when they return to them,- that thus they (may learn) to guard themselves (against evil)." The Quran, 9:122.

MORE THAN LISTENING	"Of them there are some who (pretend to) listen to thee; but We have thrown veils on their hearts, So they understand it not, and deafness in their ears; if they saw every one of the signs, not they will believe in them; in so much that when they come to thee, they (but) dispute with thee; the Unbelievers say: "These are nothing but tales of the ancients." The Quran, 6:25. Those who turn away from the word of God actually do not try to understand as the Quran states, "Whenever there cometh down a Sura, they look at each other, (saying), "Doth anyone see you?" Then they turn aside: Allah hath turned their hearts (from the light); for they are a people that understand not" The Quran, 9:127. and "And who doth more wrong than one who is reminded of the Signs of his Lord, but turns away from them, forgetting the (deeds) which his hands have sent forth? Verily We have set veils over their hearts lest they should understand this, and over their ears, deafness, if thou callest them to guidance, even then will they never accept guidance." The Quran, 18:57.
REASONING	
UNDERSTANDING THE NATURAL PHENOMENON AND COSMOLOGY.	"Behold! in the creation of the heavens and the earth; in the alternation of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain which Allah Sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters through the earth; in the change of the winds, and the clouds which they Trail like their slaves between the sky and the earth;- (Here) indeed are Signs for a people that are wise." The Quran, 2:164.

	God reveals his words and signs so people may reason as the Quran states, “Thus doth Allah Make clear His Signs to you: In order that ye may understand.” 62 The Quran, 2:242. The worst before God are those who do not use their reason as the Quran states, “For the worst of beasts in the sight of Allah are the deaf and the dumb,- those who understand not” The Quran, 8:22. and “Among them are some who (pretend to) listen to thee: But canst thou make the deaf to hear,- even though they are without understanding?” The Quran, 10:42.

Note. From (Malik, 2017).

The Prophet Muhammad (peace be upon him) the Messenger of Allah had also emphasised the importance of critical thinking stating that seeking knowledge is a duty for every Muslim. Reading the Islamic instructions that are based on the Prophet's sayings shows that they encourage critical thinking; for instance, one of the most famous sayings attributed to him is: "the seeking of knowledge is obligatory for every Muslim". This statement includes not only memorising information but also questioning, analysing and applying it. It then emphasises the importance of acquiring knowledge and using critical thinking skills to understand and interpret it. Additionally, there are several other sayings that encourage Muslims to think critically and question their beliefs. Prophet Muhammad also played a significant role to disregard uncritical aspects in the Pagan Arabs society, for instance blindly accepting ancestral practices and making false allegations (al-Bukhari, No. 18, as cited in Zhaffar et al, 2016).

Islamic scholars throughout history have emphasised the need for critical thinking in interpreting religious texts and understanding complex issues. They believe that critical thinking is essential for understand1ing the Quran and Hadith, interpreting Islamic law, and making informed decisions of daily life. Islamic scholars have encouraged Muslims to question everything and seek knowledge through observation, analysis, and reflection. They have also emphasised the need for rationality, logic, and evidence-based reasoning in Islamic discourse. “No religion celebrated human consciousness, awakening and evaluating its approach to consideration, seeking work, releasing it from the constraints of illusion and superstition, freeing it from the limitations of proscribed priests and secrets, while

safeguarding it from dissipation in no field and from undue disorder... No religion did that like Islam did. There is no religion that draws attention to God" (Kotb, 1980 , p.8). Therefore, Islamic scholars have always encouraged Muslims to develop their critical thinking skills to become better Muslims and contribute positively to society. Overall, it should be clear that in Western or non-Western culture, aspects of critical thinking can be found as they should not be associated with any particular race or ethnicity (Alnofaie, 2013).

Still, there is so much uncertainty surrounding critical thinking in western or non- western societies, and as it is of seminal importance in the individuals lives where it contributes to their development and success academically and as well as in everyday life enabling them to recognise and negotiate complex issues for themselves and for their society (Ennis, 2016). "The nature of critical thinking is so complex that it is not easy to synthesise all its aspects in a single definition" (Nieto & Saiz, 2014, p.202). Yet, much of the definitions provided advocate some of its most important aspects: cognition, skills and dispositions. It is highly advocated then to find out more about this concept and how it is understood and practiced by academics and students, particularly as the concern with critical thinking is tied to its application in higher education and the lack of sharp focus as to its parameters due to the lack of agreement about its internal definitions, and the deficiency of curricular space in higher education to deploy its insights effectively (Lipman, 2003).

Clearly, critical thinking is a complex and multifaceted concept that can be defined in various ways depending on the context and perspective (Halpern, 2014). It involves the ability to analyse, evaluate, and synthesise information from different sources, identify assumptions and biases, ask relevant questions, make logical deductions, and develop informed judgments or decisions based on evidence and reasoning. Nevertheless, Halpern (1996) pointed out that the word critical is not meant to indicate finding fault or criticising something as it might be used pejoratively to describe someone who is always making negative comments. Instead, it implies "critical" that involves evaluation or judgment, ideally with the goal of providing useful and accurate feedback that serves to improve the thinking process (Halpern, 1996). Critical thinking is a dynamic process that can be applied in various domains and everyday life. "Historically there have been different ways of conceptualising and operationalising critical thinking. Such variations emerged as a result of disciplinary or epistemological variations in the way that thought and reason are themselves defined" (Chen & Rattray, 2017, p.275). Therefore, there is no single or precise definition of critical thinking that can capture all its dimensions and applications.

Involving dimensions related to cognition, skills, abilities or disposition, these are definitions of critical thinking that have pervaded the critical thinking debate for more than fifty years. These definitions were revealed in the current section to set the scene for the next sections to further explore critical thinking.

3.4 Critical Thinking as Discipline- Specific

The critical thinking research also distinguishes between two differing views about critical thinking. The debate distinguishes critical thinking as being either a general attribute or merely discipline- specific. The generalists view critical thinking as a skill general to all discipline areas. This means that critical thinking is teachable separately from disciplines by using various approaches such as dedicated classes on informal logic or techniques of argument diagramming (Ennis, 1989, p.4). However, the specifists are those who emphasised that critical thinking could be defined as "the appropriate use of reflective scepticism within the problem area under consideration" (McPeck, 1981, p.7). It can only be correctly taught from a disciplinary vintage point and by using the language of the disciplines. McPeck (1981) highlighted that: "thinking, by definition, is always thinking about some- thing, and that something can never be 'everything in general 'but must be something in particular" (p. 4). Henceforth, the key issue underlying these contradicting views is whether critical thinking should be thought of as some universal, abstract category, or whether it is just a catch all term that takes in a wide and different array of modes of thinking (Moore, 2011a, p. 262).

Discussions about critical thinking have revealed dissimilarities between different kinds of critical thinking which directly amount to a rejection of the generalist view (Moore, 2004, pp. 8-11). The specifists claim that critical thinking is always contextual and intimately tied to the particular subject matter under consideration (Atkinson, 1997; McPeck, 1992). McPeck is one of the famous advocates of the relativist view who asserts that "critical thinking exhibits a good deal of variation, and it is shaped irredeemably by the particular problem area under consideration" (1981, p.7). McPeck is very confident that there is a discipline basis to such variation: "just as the rules of a particular game do not necessarily apply to other games, so certain principles of reason may apply within certain spheres of human experience, but not in others. A principle in business or law may be fallacious in science or ethics"(1981, p. 72). Wittgenstein (1958) who argued that the meaning of a word is not fixed or determined by some inherent essence or definition, but rather by its use in a particular language game or context. This means that the same word can have multiple meanings depending on the context in which it is used. On this subject matter of discussion, the term game, for example, cannot

be limited to a single core of meaning and that each category has its own rules. Critical thinking is the same; it cannot be limited to a defined set of cognitive operations; however, it implies the multiplicity of practices, ones that are rooted in the quite individual nature of different disciplinary language (Moore, 2011a, p. 271).

The argument of the specifists emphasises the idea that critical thinking is differently established in various disciplines. This is proven through data gathered from Moore's interviews with academics from different disciplines such as Philosophy, History and Literary and Cultural Studies. The participants surveyed believe that critical thinking is constituted in different ways through their respective disciplines (Moore, 2011a, pp. 263–267). This position indeed derives from an assessment of a small perspectival data set, but it suggests the educational reality of critical thinking practices as it does denote that many instances of critical thinking in the disciplines are hard to define, have different levels of complexity and do not transfer easily from one context to another. This leads to accepting that critical thinking is discipline-specific in nature.

It is on this basis and the arguments referred to earlier, the claims of the specifists seem to be more acceptable and that critical thinking is not a universal or an abstract concept; therefore, it should be seen as a discipline-specific concept. However, critical thinking can share some elements from the specifist and the generalist view as critical thinking might be about questioning ideas, but its application is different in disciplines due to the different disciplinary ways of thinking and practising.

3.5 The Generalist position in the critical thinking debate

Researchers who take a generalist position within the critical thinking debates argue that critical thinking skills should be taught as a broad set of skills that can be applied across various domains and contexts, rather than as a set of domain-specific skills. Some prominent researchers who have advocated for this approach include Robert Ennis, Richard Paul, and Linda Elder. The generalist view considers critical thinking as a generic abstract skill that can be distilled down to a finite set of constitutive skills, ones that can be learned in a systematic way and which have applicability across all academic disciplines (Ennis, 1992). Most of the advocates of the generalist view suggest that "the specifist approach to critical thinking is dangerous and wrong" (Moore, 2011), and as a justification for their approach, they claim that the critical thinking developed in general contexts is readily transferable to other more specific contexts. Ennis (1989) dissented the specifist view of critical thinking as he believed

that critical thinking is more of a general skill than it is specific to any one "domain," "subject," or "topic," and so should be demonstrable through general critical thinking tests. For Ennis "critical thinking is at heart a universal and generic quality…it is a reasonable, reflective thinking focused on deciding what to believe or do" (1987, p. 10). Ennis (1987) also believes that critical thinking can be taught as an independent area of study in itself, quite separate from any specific discipline-based content in a 'stand-alone 'generic thinking skills course where in this course, educators should compile a systematic list of discrete skills to be taught to a novice critical thinker. These skills include grasping the meaning of statements, judging ambiguities, assumptions or contradictions in reasoning and identifying necessary conclusions.

In the defence of the generalisability of critical thinking, Martin Davies in his works suggested that transferable generic skills such as critical thinking may indeed be hard to isolate or to satisfactorily explain, but this does not justify the adoption of the relativist approach elucidating that if critical thinking is to be understood as diverse modes of thinking in the disciplines, no priority need be granted to generic skill development as the latter is merely one mode of thought among many (Davies, 2013). This divergence concerning the nature of critical thinking will cause many complexities in educational decision making and policy which are totally undesirable. When educationalists themselves are influenced by the premises of the relativist approach, it is unsurprising that little attention is to be given to teaching and assessing these skills. As Benouar (2013) claimed, this results in students lacking argumentative skills to perform in universities and the workplace which employers are right to complain if graduates cannot think critically. Thus, educators are obliged to resolve their failure of defining the nature of critical thinking itself so that they will be able to impart it adequately to their students (Davies, 2013). Apparently, this bifurcation of thought concerning critical thinking needs to be resolved as it clearly has a major impact on educational policy and could lead to more complexities (Barnett, 2004).

The infusionist position, however, accepts that the generic critical thinking is fundamental at certain levels whilst accommodating the discipline- specific nature of critical thinking. This is the view of others; those who take both views as acceptable (Ikuenobe, 2001). The infusionist position is a perspective that emphasises the integration of critical thinking skills into all aspects of education and life. Infusionists argue that critical thinking should not be taught as a separate subject but rather integrated into all subjects and activities. They argue that by integrating critical thinking into all aspects of education, students will

develop stronger problem-solving skills, better decision-making abilities, and more effective communication skills. This stance indicates the priority of dependence of universal generic skills and the relative independence of critical thinking discourse. Precisely where the generic, universal form of critical thinking and the narrative discipline-specific instances of critical thinking discourse meet and diverge is open for conjecture. "What is important is an acknowledgement that this is not a dilemma at all and that no horn needs to be chosen as critical thinking is polemical in nature" (Moore, 2011a, p. 264).

In a spirit of conciliation, Moore (2011a) clarifies that there is unlikely to be any harm for students participating in general thinking programs. The generalist view is probably misplaced, and that other considerations need to be encompassing discipline- based relativistic view of the nature of critical thinking (p. 263). This position is critiqued for the reason that critical thinking cannot be effectively taught through integration alone and that it requires explicit instruction and practice. They also argue that without explicit instruction, students may not develop a deep understanding of critical thinking concepts and may struggle to apply them in real-world situations. Overall, the infusionist position represents one perspective in the ongoing debate about how best to teach critical thinking skills.

The lack of agreement between philosophers and educators concerning critical thinking denotes its high importance. Being described as the most difficult term in education (Moore, 2011), it is not surprising that for this complexity there is the potential confusion for students or teachers in the way they engage with critical thinking in their studies. As there is clearly a link between success and the ability of being a critical thinker, what is important is that scholars need to shift their stands in a way to encourage students' criticality solely. The current study, then, aims to explore the teachers' understanding and conceptualisation of critical thinking and how their position be it generalist or specifist influences their support of the development of students' critical thinking or the choice of the approaches or methodologies they practice for students' critical thinking development.

3.6 Critical Thinking: An individual attribute or a social aspiration?

When we ask whether critical thinking is regarded as an individual attribute or merely a social aspiration, we can say that views are divided when examining that matter. Hereafter, this dimension discussion reveals that views are differing when it comes to dimensioning critical thinking as it could at one level be directed for the development of the individual and at another level targeting a social-cultural demand.

Davies (2015) reviewed the view that stands for what is called the individual dimension of critical thinking. He argued that critical thinking is all about the development of certain sorts of skills in the individual. Skills such as argumentation and making sound judgments. Of course, with the disposition to use them as critical thinking is about dispositions as well. Critical thinking in this sense is essential for the individual's self- development as being an individual critical thinker naturally has many personal and social benefits (Halpern, 2014). Individuals who possess critical thinking skills are more likely to succeed in their personal and professional lives. They are better equipped to navigate complex situations, adapt to changing circumstances, and make sound decisions based on evidence rather than emotions or opinions. In addition, critical thinkers are more effective communicators as they can articulate their ideas clearly and persuasively. Not to mention its need in the work industry where critical thinking is highly valued by employers. Employees who possess critical thinking skills are more likely to identify opportunities for improvement or growth within their organisations and develop creative and innovative solutions to complex problems (Davies, 2015). Thereafter, much of the scholarly effort should be spent on this individual axis for its advantages on the individual's development.

Other researchers, however, view critical thinking as much about changing the society, and the conditions of social oppression through demonstrating individual skills in reasoning, argumentation and judgments (Burbules & Berk, 1999, p. 47). Their focus is not on individual skills and dispositions as much as the social and political relevance of arguments and reasoning. They argue that questioning power relationships in society must be considered a central part of critical thinking (Kaplan, 1991). Some scholars defending critical democratic citizenship education have a distinct view of critical thinking. They believe that critical thinking has a dimension of inter-personal socially-appropriate caring in addition to its social and political dimensions (Noddings, 2005) and in order to nurture critical thinking, they argue, "instructional designs are needed that do not capitalize on applying tricks of arguing, nor on the cognitive activity of analysing power structures, but contribute … in a meaningful and critical way in concrete real social practices and activities" (Ten Dam & Volman, 2004, p. 371). Thus, learning to think critically should be the result of participating critically in the social practices of the community which a person belongs to. A good citizen is the individual who embraces skills in argumentation, formation of sound judgments, and most importantly being a socially adept and virtuous person with the capacity to consider the interests and needs of his/her community (Ten Dam & Volman, 2004). This is the socio-cultural dimension of

critical thinking which has moral as well as cultural traits. Although it is neglected by many researchers, but more work is being done on this socio-cultural dimension due to its importance to the society as a whole. The present study aims as well to explore the teachers' views of the importance of critical thinking, whether the teachers are aware of these axes in developing their students' critical thinking and how they practice that in their contexts.

For Davies both the individual and the socio-cultural dimensions can be given a place as they are of equal importance and should be reconciled in one model of critical thinking in higher education. He maintains that: "both dimensions are seen as separate and distinguishable axes or vectors that account for very different, equally important, aspects of critical thinking" (Davies, 2015, p.45). Of course, society also demands individual critical thinking skills and dispositions as these are essential for employment and the social and political practices in a community. Critical thinking could, therefore, be both an individual attribute and a social aspiration.

3.7 Critical Thinking in Higher Education

As discussed earlier in the definition section of critical thinking (see section 3.3), the use of the term critical thinking goes back to the American philosopher John Dewey who defined it as an active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends (Dewey, 1933). Afterwards, many schools adopted critical thinking as an educational goal and looked for ways to improve it in this context. Other educators developed tests for its evaluation (Smith & Tyler, 1942). Indeed, critical thinking was stated in several writings within different disciplines before the 1950s, but it did not really attract scholars from the higher education sector until the 1980s when educators at the California state university advised that critical thinking should be defined as one of the basic skills to provide the foundation for advanced skills of all kinds. Thereafter, a huge interest in support of critical thinking development grew worldwide and the debates underpinning the concept begun particularly in the higher education sector. This section then will be dedicated to discussing critical thinking as part of the higher education context in which the current study focuses particularly on the Algerian university context.

In the 21st century, critical thinking has become essential in addressing global challenges, and higher education plays a key role in equipping undergraduate students to be critical thinkers and active participants in society (Penkauskienė et al. 2019). Different points of view

to characterise what counts as critical thinking in the context of higher education. Brookfield (2002) argued that critical thinking involves taking up positions which are not part of the existing order, hence testing thinking by working outside, or beyond the traditional limits. Students will then need to be asserting a critical distance between their own perspective and the objects of their study which become in turn open to critical appraisal through a process of estrangement. This means making the familiar strange to be able to construct a critical view.

Davis and Barnett (2015) believed that critical thinking is a defining condition of higher education. They suppose that we cannot say we are espousing the cause of genuine higher education unless efforts to support criticality are present in the design of curricula, particularly in teaching and in the teacher-student relationship since "teaching CT becomes a necessity in every educational curriculum, given the multi-faceted nature of the world we live in today" (Ouahani & Hiba, 2023, p.91) . Ennis (2013a) urges as well that his conception of critical thinking can serve as a basis for further development of critical thinking teaching, assessment, and curriculum development which has been mostly neglected. His conception adheres to the possibility of the combination of both the discipline-specificity and the generalisability views of critical thinking in coordinated ways that complement each other. This combination labelled 'critical thinking across the curriculum' is rarely seen or even attempted in higher education despite the fact that it provides a deep and comprehensive grasp of critical thinking by students (Ennis, 2013a). This proposal for critical thinking in the context of higher education offers a comprehensive plan that addresses teaching, assessment, and particularly curriculum organisation and development and at the same time accommodates the personal and professional lives of students. In this effort, there should be a huge emphasis in incorporating critical thinking into the higher education system.

Another more precise definition is offered by Facione who clarifies that the very core of critical thinking includes these cognitive skills: interpretation, analysis, evaluation, inference, explanation, and self- regulation along with having a clear purpose of proving a point, interpreting what something means or solving a problem and sometimes a collaborative and a non-competitive endeavour. (Facione, 2015, p. 5) This means that critical thinking is a purposeful, determined and self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the different considerations upon which that judgment is based. Facione (2015) adds that critical thinking is a liberating force in education and a powerful resource in one's personal and social life.

According to Facione (2015), the ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating strong critical thinkers means working toward this ideal. It combines developing critical thinking skills with nurturing those dispositions which consistently yield useful insights, and which are the basis of a rational and democratic society. This means that educating strong critical thinkers is crucial for both personal development and the well-being of society as a whole. It involves not only teaching specific skills but also instilling certain dispositions that promote rationality and objectivity in decision-making.

Alternatively, the European Higher Education Area (2012) has stressed out the importance for students to think critically as part of a genuine student-centred learning which can be seen in the curriculums of many universities. It is pointed out that thinking critically is a process, and its acquisition takes time. Within this process, university teachers must be aware of the need of a transformation to adjust their teaching methodologies to the learning of their students, as their way of thinking may generate fixed routines in their teaching practices (Cornejo et al., 2018). That is, the teachers must also reconsider their practices and introduce different and varied methodologies. As it is apparent that people with better critical thinking skills have more opportunities in their professional or personal lives (Franco et al., 2017). Henceforth, as Tsui (2002) stated, in higher education more work should be done to teach students how to think as the demand for critical thinking skills is high.

3.8 The importance of the development of students' critical thinking

After initiating a discussion of the prevalent proposed definitions of critical thinking and the debates underpinning this concept, we need to acknowledge the fact that the development of students' critical thinking at the university level has been widely recognised (Bezanilla et al., 2021). The importance of critical thinking is further confirmed as critical thinking was one of the most frequently mentioned competencies considered essential for both academic and career success (Liu et al., 2014). Fitriani et al. (2020) have also emphasised that critical thinking skills are essential and valuable for every individual, especially in the field of education. Critical thinking is frequently referred to as one of the most important outcomes

of contemporary higher education (Schendel, 2016) as Fisher (2001) explained, critical thinking has become a buzz word in the educational sector. The literature denotes various reasons justifying the significance of developing students' critical thinking as researchers have differing perspectives and foci. These different views confirming the importance of critical thinking will be discussed in this section.

It is widely acknowledged that without developing higher education and without producing a critical mass of skilled and educated graduates, the less-developed countries can neither ensure sustainable development (Khan et al., 2017). Researchers and educators generally agree about the importance of teaching critical thinking skills in higher education (Behar-Horenstein & Niu, 2011). Ozkan-Akan (2003) asserted that the development of critical thinking skills in different educational institutions have become one of the main objectives of schools and higher education programs. Critical thinking helps in creating citizens who are skilled at attempting to discover new things instead of restating what other people have already accomplished. Additionally, the aim is to inform and challenge people's thinking skills in terms of critiquing and evaluating knowledge in general and school curriculum in particular. That is why, it is essential for critical thinking and education to work in parallel to achieve these goals as many studies' findings have proven so (Ozkan-Akan, 2003).

In the field of teaching English as a foreign language, Shikhani and Fahim (2011) asserted the importance of developing students' critical thinking for mainly three reasons. Critical thinking is a valuable skill that empowers students to take control of their thinking and learning processes. By practising critical thinking, students can effectively monitor and evaluate their learning methods. This ability also enhances students' overall learning experience and helps them to better understand the language they are studying. Ouslimani and Aboubou (2021) also indicated the central role played by critical thinking in the effectiveness of language pedagogy. Additionally, as research has shown (Fong et al., 2017), critical thinking is strongly linked to academic success and high performance. Heruna et al., (2022) indicated that " critical thinking allows students to process information well to assist independent learning. Students who are not equipped with critical thinking and problem solving skills will have difficulties when competing in work and society" (p.174). Therefore, developing critical thinking skills is crucial for students who want to achieve their full potential in language learning.

For Hasruddin (2009) critical thinking enables students to consider different or similar opinions to theirs and as a result, they can make a scientifically evidenced judgment based on logic and reasoning and thereafter be confident in making decisions. To Indrasiene et al.,

(2019), "critical thinking is often identified as an objective or an ideal of higher education, which the efforts of the academic community should be focused on. This objective is described as graduates' ability to become critically thinking professionals able to build their lives, to cooperate successfully with others in solving emerging problems, to make risky decisions contributing to the welfare of society" (p.31). These researchers believe that critical thinking is highly important for graduates' personal and social development. As critical thinking helps to develop a personality able to act critically in personal and interpersonal spaces, to seek professional success, and to become a member of a smart society (Halpern, 2014). Ennis (2016) has also emphasised the importance of critical thinking in the development of higher order cognitive skills such as reflection, self-awareness, and others, which in turn contribute to the analysis and finding solutions for their social problems. This means that by engaging in critical thinking, individuals are able to reflect on their own beliefs and assumptions, evaluate arguments based on evidence, consider alternative perspectives, and develop empathy towards others acting as effective citizens.

It has been revealed in the past decades that critical thinking has been incorporated as a core skill in formal school curricula in many countries for different reasons (Altinyelken, 2015). First, critical thinking is considered valuable for the teaching and learning processes as it improves the quality of education, and it stimulates learners to become independent, more engaged and self-directed learners. Second, beyond education, critical thinking plays an imperative role in increasing economic growth and competitiveness, meeting labour market demands, and actively participating in democratic societies (Hanushek & Wöbbmann, 2008; Ten Dam & Volman, 2004 as cited in Altinyelken, 2021).

Moreover, the Committee of Economic Development (2015) and The Partnership for the 21st Century Skills (2017) have both identified critical thinking as an essential skill for empowering students and boosting their success professionally. Critical thinking is seen as a quality sought by employers of university graduates (Nor & Sihes, 2021, p.2). Employers value critical thinking because this skill requires a combination of cognitive abilities, such as analytical reasoning and creativity, as well as personal qualities like curiosity and open-mindedness. Thus, it enables employees to solve complex problems, make sound judgments and reasoned decisions, take purposeful actions and most importantly innovate and cope with the rapidly changing business environment. In the same line of thought, Melouah (2017) reported that educators agree that improving students' critical thinking skills lead students to succeed in their academic studies and professional lives. Piaget (1958) as cited in Fischer

(1995) stressed out that fostering students' critical thinking skills as a primary objective of education. He believes that the aim of education is to produce individuals who can innovate and create rather than simply replicate what has been done before. This indicates that it is crucial to develop minds which can think critically and evaluate information rather than developing minds which accept what is offered passively. According to Browne and Keeley (2013), critical thinking involves questioning the credibility of resources being used to form an informed opinion. By asking a series of critical questions, the aim is to determine the most suitable decision.

Paul and Elder (2020) pointing out to critical thinking have also reported that: "everyone thinks it is our nature to do so, but much of our thinking is left to itself, is biased, distorted, partial, uninformed or downright prejudiced. Yet, the quality of our life and that of what we produce, make or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated" (p. 9). The authors denoted that critical thinking is essential for a high-quality life and profession. Therefore, shoddy thinking which can negatively impact our lives should be avoided while excellence in thought must be intentionally developed. Similarly, Tenías (2013) suggested that in today's society, it is crucial to foster the practice of being well informed and possessing the ability to defend and communicate one's ideas effectively. Additionally, it is important to be able to comprehend, scrutinise and evaluate others' perspectives as well.

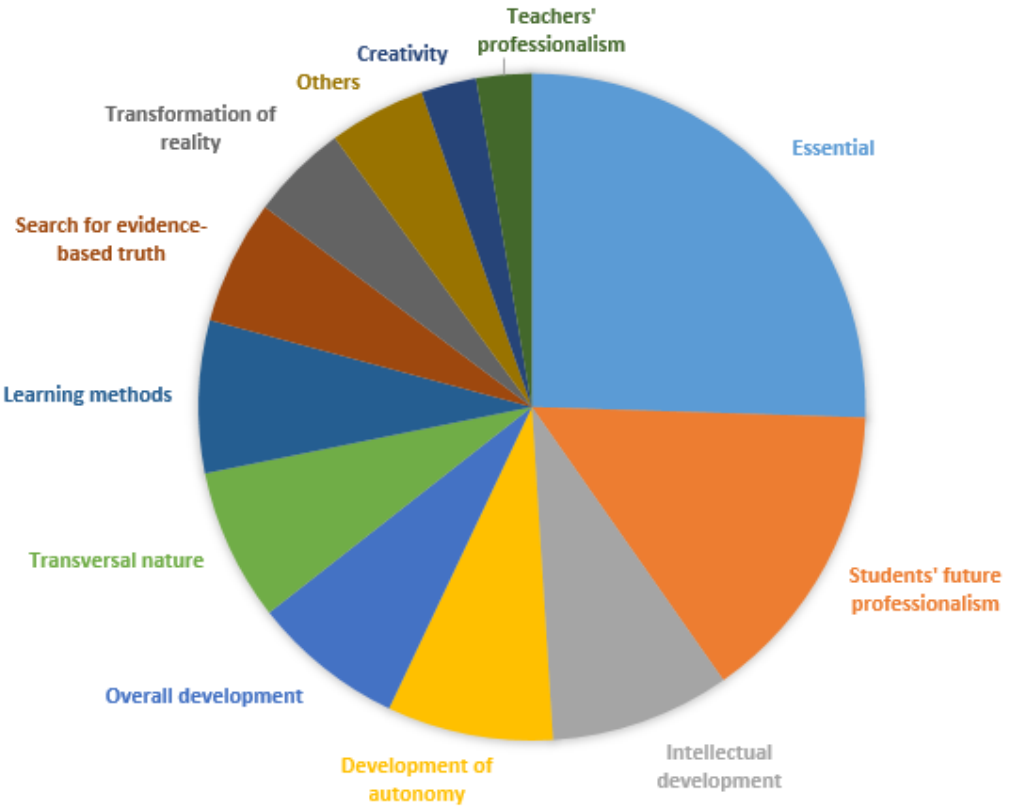
According to Franco (2016), critical thinking is essential in daily life, and this is justified on the basis of three key ideas: because people are built to believe, because living is all about choosing and, mostly, because higher education liberates. First, people have a natural tendency to believe what they hear or see without questioning it, which can lead to errors in judgment. Critical thinking is important because it teaches individuals how to question assumptions, evaluate evidence, and make informed decisions based on sound reasoning. This skill is essential in today's world where misinformation and fake news are prevalent. Secondly, living involves making choices every day whether small or big decisions. These choices can have a significant impact on our lives and those around us. Therefore, it is important to develop critical thinking skills through higher education to make informed decisions by weighing the pros and cons of different options, considering alternative perspectives and anticipating potential consequences. Lastly, education is a means of liberation that provides individuals with knowledge and critical thinking skills to navigate the

world successfully. Higher education helps individuals engage with complex ideas, challenge assumptions to become well- informed and empowered citizens capable of challenging injustice and inequality in society. Thus, by developing critical thinking skills through higher education, individuals can become more informed, empowered and effective in their personal and professional lives.

Another study by Bezanilla et al. (2021) which investigated 142 teachers' views about the importance of developing students' critical thinking in hispanophone higher education, the possibility of developing it in their context and the difficulties or limitations faced for this practice. The researchers concluded that their analysis settled on two main reasons justifying the importance of the development of students' critical thinking in higher education from the teachers' perspective: the essentiality of critical thinking at higher education; and the importance of developing critical thinking for being a good professional in the future, in a changing and complex world. Other reasons stated by the participants of the study are summarised in Figure number 3.2

Figure 2.2

Teachers' Views of the Reasons Behind the Importance of Teaching Critical Thinking in Higher Education



Note. From Bezanilla et al. (2021).

3.9 Critical thinking development

According to Kruse (2011), critical thinking essentially means to leap out of usual currents of thinking and to learn how to further examine or re-examine something which has already become generally accepted knowledge. At the same time, this is not only about formation of competencies, but also about personal development, which can have critical attitude in learning about reality, critical thinking, considering from several angles, evaluating from more aspects, searching for other solutions, verifying, checking… (Kruse, 2011). Until recently, it was generally assumed that students who attend college would develop critical thinking skills by joining classes, or listening to lectures and participating in class discussions,

or even by taking tests and completing regular course assignments (Reed, 1998). Several studies, however, have indicated that improving students' thinking requires more explicit teaching of critical thinking skills (Bangert-Drowns & Bankert, 1990; Halpern, 1998). Thereafter, a large body of research approved that critical thinking can be taught and improved by such instruction (Butchart et al., 2009; Dwyer, Hogan, & Stewart, 2012; Hitchcock, 2004; Reed & Kromrey, 2001; Rimiene, 2002; Solon, 2007). Consequently, a number of models and strategies to the teaching and development of students' critical thinking have been acknowledged. These will be discussed in the following sub-sections thoroughly.

3.9.1 Critical Thinking Models

A critical thinking model is a framework or a process that helps individuals to analyse, evaluate, and make decisions based on evidence and reasoning. Various models for teaching critical thinking have been developed in the field of education. Although, some scholars have proposed short and comprehensive models, yet these models overlap in their aim to incorporate critical thinking activities into educational settings (Fahim & Eslamdoost, 2014). According to Paul (1993), particularly in the context of education, a model encourages teaching students to assess their own thinking whether it is expressed in reading, writing, listening, or speaking because individuals cannot be considered as critical thinkers unless they are capable of assessing their own thinking. This, in turn, could only be achieved by allowing for intellectual give and take and supporting interdisciplinary thinking as it proved to help students examine their own thinking. There are various models for critical thinking in which it is necessary for the current study to discuss some of them to recognise their benefits and drawbacks in the development of students' critical thinking.

3.9.1.1 Norris and Ennis (1989) Model

One of the interesting models of critical thinking is the one initiated by Norris and Ennis (1989) who proposed a five-step model to develop students' critical thinking . The model is designed to meet the requirements of a critical thinking inspiring course and includes the following steps: elementary clarification, basic support, inference, advanced clarification, strategies, and tactics successively (Fahim & Eslamdoost, 2014). The first step involves identifying and defining key terms, concepts, and ideas related to the topic being studied. It helps students understand the basic vocabulary and concepts necessary for critical thinking. In the second step, students learn how to identify evidence that supports or contradicts a particular argument or claim. They also learn how to evaluate the credibility of sources and evidence. The third step involves drawing conclusions based on the evidence presented.

Students learn how to make logical inferences from the evidence they have gathered. The fourth step involves analysing complex arguments and identifying hidden assumptions or biases that may be present. Students learn how to identify fallacies in reasoning and how to avoid them. For the final step, students learn practical strategies for applying critical thinking skills in real-world situations. They learn how to use critical thinking skills to solve problems, make decisions, and communicate effectively with others.

Overall, Norris and Ennis' five-step model provides a structured approach for developing critical thinking skills in students. By following these steps, students can become more effective thinkers, better able to analyse complex information, evaluate arguments, and make informed decisions based on evidence. Yet, this model was criticised for its being too broad and not specific enough to be useful in practice; additionally, it does not provide enough guidance for teachers or students (Ennis, 1989).

3.9.1.2 Paul' s critical thinking Model (1993)

Richard Paul in the early 1990s used both philosophical and cognitive approaches to critical thinking in this model which is mostly concerned with reasoning about everyday issues or problems that cannot be confined within the knowledge structure and content of a single academic domain as summarised in Figure number 3.3. He established this model upon the belief that critical thinking requires an integration of cognitive and affective domains and that content in any discipline should be viewed and taught as a mode of thinking seeing for example history as historical thinking and so on (Foundation for Critical Thinking, 1996). This means that thinking critically about a domain or a problem includes cognitive elements of reasoning and normative standards in addition to affective dispositions. In this regard, Paul (1993) asserted that the thinker must be guided by two important characteristics which are: universal intellectual standards such as clarity, precision, accuracy and relevance irrespective of the domain under consideration, and the appropriate dispositions or intellectual virtues as empathy, humility, integrity, perseverance and fairness that aid in overcoming the biases and unsupported assumptions people bring to an investigated issue.

According to Reed (1998), this model relies on reasoning about a field of study, issue, document, problem, etc complementing eight elements which are: purpose, question, information, concepts, assumptions, points of view, inferences, and implication. Paul's model, explains Reed (1998), seems extremely well-suited to teaching different subjects since

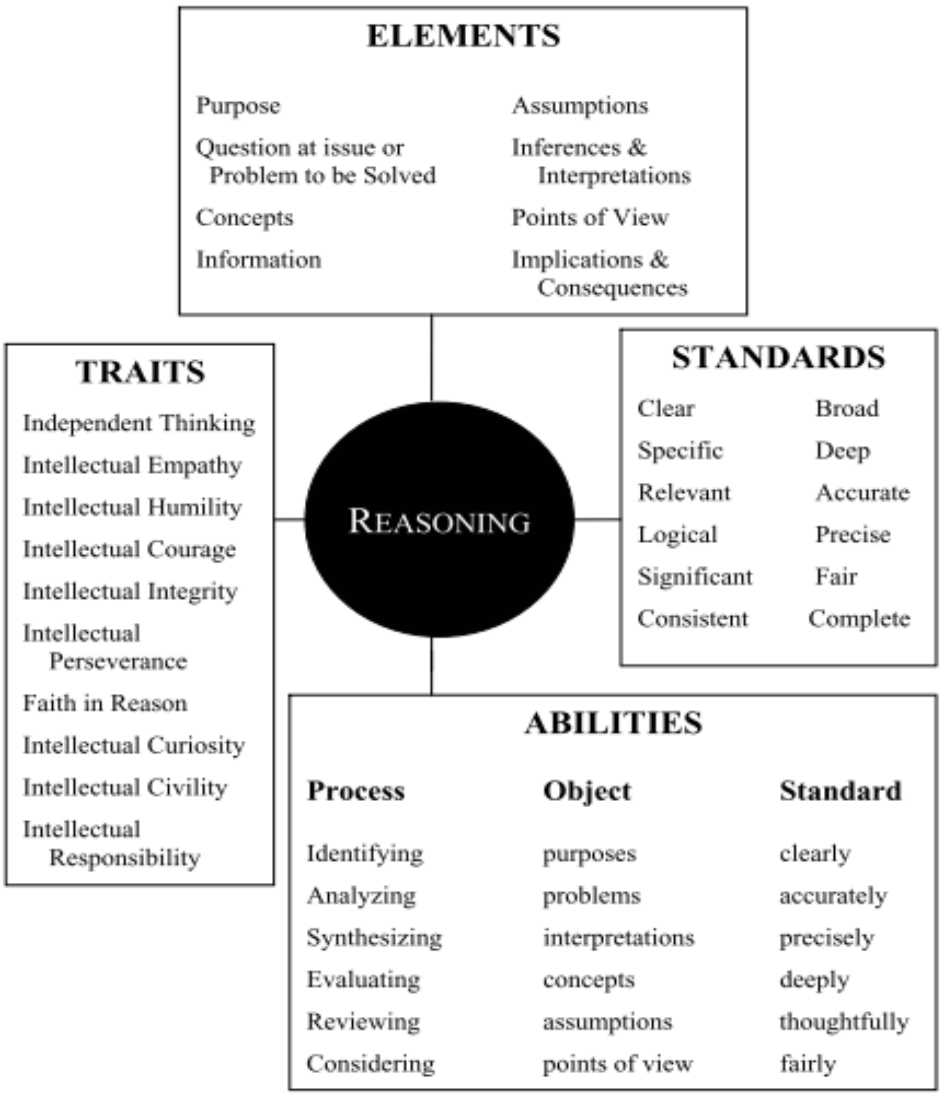
it is a highly flexible, theoretically rich, broadly applicable model and compatible with a variety of teaching styles for it requires particular application by instructors.

Many educators find Paul's model exceptionally useful as his publications are directed towards the elementary and secondary education, and it includes a variety of practical examples suiting a variety of circumstances. Not only this, but Paul often addresses his writings to university and college practitioners, and his model appears to be equally appropriate for higher education. Thus, this model is privileged by these educators because they believe it to be an approach to teaching content in a more thoughtful manner and its being adaptable for use in a wide range of academic and real-world situations.

However, this general nature of the model which allows its applicability in any subject matter requiring reasoning makes it more difficult to use than more highly structured programs accompanied by specific lesson plans. Paul's model: "for all its merit, it is fraught with a considerable number of contradictions, omissions and inconsistencies which diminish its explanatory power" (Prime, 1998, p.66). It is much criticised for it gives importance to logic and rational standards in the thinking process, which some scholars argue provides a style of inquiry that is conducive to definitive answers and overlooks the importance of other forms of knowledge. Prime (1998) stated that: "by giving pre-eminence to logic and rational standards in the thinking process, Paul's view legitimizes a style of inquiry that is conducive to definitive closure. It is fundamentally reductionist: it tends to privilege exclusion over integration, object over relationship" (pp iv -v). Prime has also argued that Paul's model of critical thinking places too much emphasis on intellectual standards, such as clarity, accuracy, and precision, and not enough emphasis on the context in which critical thinking occurs (Prime, 1998). That is why using Paul's model effectively requires conceptual understanding, skills, and commitment on the part of its practitioners. Thereafter, adequate training and support must be provided to both educators and students when integrating this model (Reed,1998).

Figure 3.3

Richard Paul Critical Thinking Model (Reed, 1998)



3.9.1.3 Perkins and Murphy (2006) Critical Thinking Model

Following earlier models initiated by Norris and Ennis (1989) and Pauls' Model of critical thinking (1993), Perkins and Murphy (2006) introduced a four step approach to embed and assess critical thinking in educational settings. This model demonstrates the potential usefulness and importance of identifying critical thinking in online asynchronous discussion groups. The model is comprised of clarification, assessing evidence, inference, and strategy building. These researchers indicated that the four processes begin with clarification which involves recognising the issue or problem that needs to be addressed. It requires gathering

information and defining the problem clearly. Next is assessment, in which, relevant information is collected from various sources such as books, articles, experts, and personal experiences. The information should be evaluated for its credibility and relevance .The third process is inference, which involves analysing the information gathered in the previous stage to determine its validity and reliability. It requires critical thinking skills such as logic, reasoning, and judgment. Finally, the fourth process, strategies, does not refer to tactics such as the use of algorithms or models, but to practical proposals for dealing with the issue under discussion (Perkins & Murphy, 2006) In this final stage, different viewpoints are considered to gain a broader understanding of the problem. This involves examining different arguments and considering their strengths and weaknesses.

This critical thinking model was criticised for the small scale nature of the study and for the need to rework the model to suit different educational objectives. Perkins and murphy (2006) admitted that their study was limited to coding by only one rate, consequently no tests of reliability were conducted. Thus, further work would be useful in verifying or refuting this work. Future research might make use of the model with other raters, in different courses, in other contexts and with more participants. Overall, Perkins and Murphy's critical thinking model emphasises the importance of identifying problems clearly, gathering relevant information from credible sources, evaluating evidence critically, and considering alternative perspectives to arrive at informed decisions or solutions.

3.9.1.4 Martin Davies (2015) : A model of critical thinking in higher education

Davies (2015) proposed a model for critical thinking in higher education comprising of a series of concentric circles. He claims that this model of critical thinking represents the disparate perspective of a single concept in use as critical thinking, while complex in nature, is still one phenomenon. His view asserts that most viewpoints concerning critical thinking, while occupying different spaces on the model, contribute something different to our understanding of this single concept.

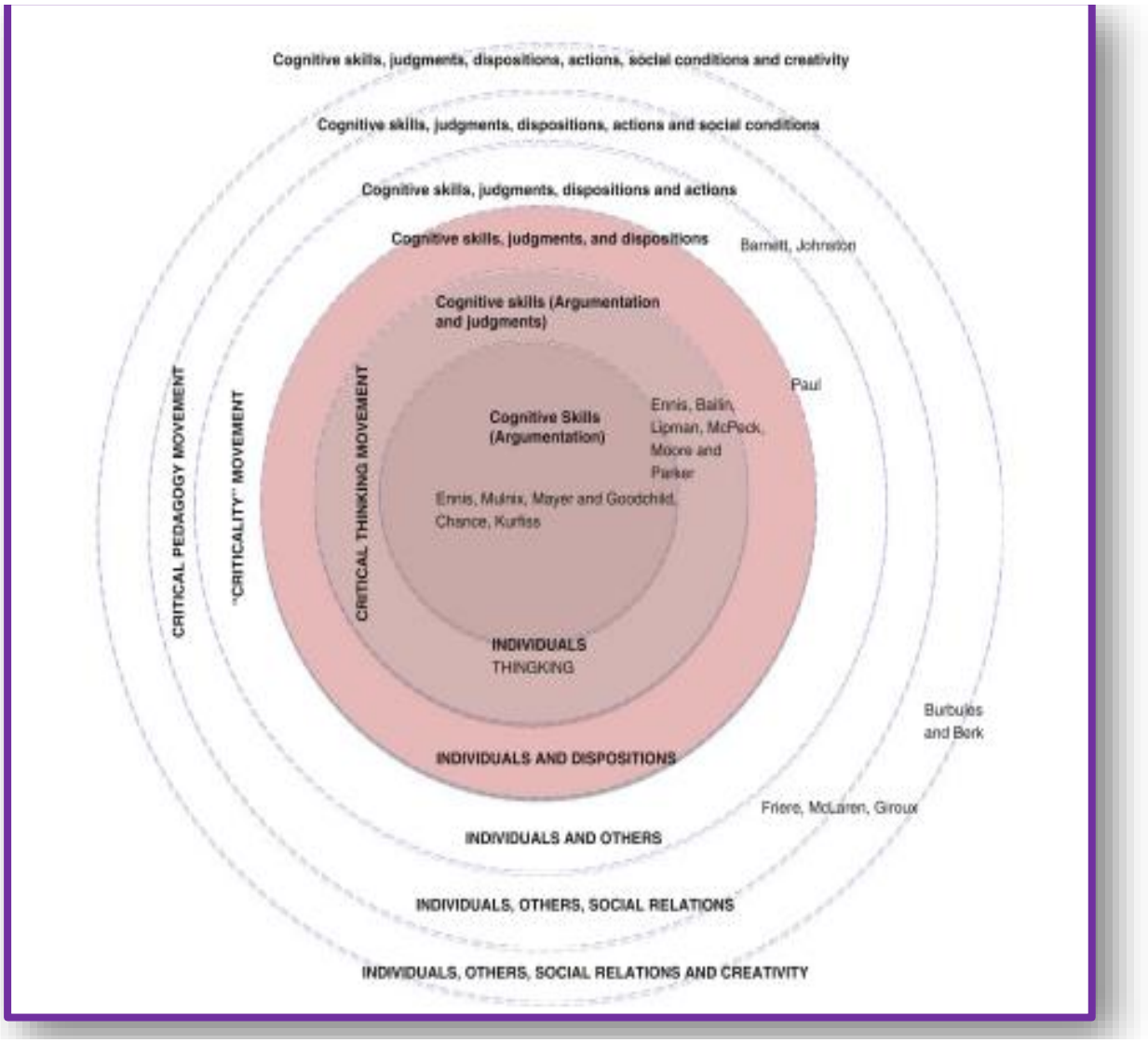
Presented in the Figure 3.4, this model consists of circles of critical thinking that radiate out from a focus on the individual dimension to the socio-cultural dimension i.e., emphasising the individual and his or her cognitive skills and dispositions in addition to the social context in which this individual thinker engages in critically and more importantly, there is a focus on individuals' actions and their wider social and educational context (Davies, 2015). Permeability between each level is key in this model and it is signalled within the circles in

the sketched dotted lines. The inner circles drawn constitute the critical thinking movement which include cognitive factors and propensity elements. In addition, a major circle indicates the view of Robert Ennis (1989) who initially focused on defining critical thinking as a cognitive skill and has modified his stance to incorporate critical thinking judgments and dispositions as well for that critical thinking signifies a 'reasonable, reflective thinking focused on what to believe or do'. This alteration is believed to be a kind of natural evolution in perspective (Davies, 2015) and it occurred to many other theorists who have modified their initial views to adopt wider perspectives.

Constituting the other circles of this model, there are different aspects of the various critical thinking movements. They are namely: critical thinking having a cognitive dimension, critical thinking having a cognitive dimension plus the propensity dimension then adding to these movements, the criticality dimension and critical thinking as all of these, in addition to social critical pedagogy dimension, and finally what Burbules and Berk (1999) offered, critical thinking as creativity dimension.

Figure 3.4

A Model for Critical Thinking in Higher Education ***(Davies, 2015)***



The three innermost circles of argumentation, judgments, and dispositions constitute the critical thinking movement whereby educational philosophers seek to define the concept of critical thinking. They focus on critical thinking at the individual level differing from the fifth and sixth circles which focus on the social level of critical thinking. The fourth circle is an intermediate stage constituting what Davies called the 'criticality movement 'where a group of scholars from the higher education sector have the interest in the wider ramifications of critical thinking for higher education, tertiary institutions, and society at large. The fifth circle

constitutes a movement of educational radicals working at the intersection of philosophy, higher education, pedagogy, and politics. This is what is customarily known as the critical pedagogy movement. The sixth outermost circle is constitutive of a possible extension of the scholarship of critical thinking into a stage of intuitive thinking and critical being that is still under- developed. Davies explained as well that in his model, there is no reason why scholars cannot investigate critical thinking along all dimensions outlined simultaneously (Davies, 2015). As a comprehensive satisfactory account of critical thinking in higher education will need to run in a permeable way through the circles and not be confined in the orbit of any particular dimension. Thus, a localised, philosophical treatment of critical thinking is needless (Davies, 2015).

This model offers so many advantages according to Davies. First, the model helps to find out how researchers although coming from different scholarly domains relate to each other when it comes to research about critical thinking. The model mentioned key proponents of each position. Ennis and his colleagues are centrally placed in the cognitive skills based circle although also sympathetic to the dispositional approach. Paul, on the one hand, has demonstrated a willingness to consider social ramifications and concerns. On the other hand, Barnett and Johnston are representatives of the criticality movement circle committing to critical action in higher education to educate critical and engaged citizens. The social pedagogues, Freire, Giroux, McLaren and others, are unconcerned with the skills debate as they are firmly devoted to the social relations; being an essential part of radical critical thinking. The outermost circle is for those who see critical thinking as an open, creative pursuit viewing critical thinking as intuitive, trans-critical responsiveness (Davies, 2015).

Second, Davies's model assures a reconciliation between the critical thinking movement and the critical pedagogy movement. This is by means of the fourth, intermediary and connecting circle. The emphasis placed by Barnett and others on criticality provides a point on which both parties can agree, and on which they can leverage their respective interests. They both, although to varied extents, acknowledge the importance of action and a wider, social context of critical thinking. That is, they sit on both sides of a trial in the adoption of a radical politico-social agenda and not restricting critical thinking to argumentation, judgments and dispositions solely (Davies, 2015).

Third, the model helps to identify boundary disputes and offer resolutions to them . One of the long-standing disputes is the debate between the generalist and the specifist views

to critical thinking (Davies, 2013; Moore, 2011) which has indeed polarised scholars in the field of critical thinking more than anything. The model shed the light on this issue and suggested an agreeable solution. As Davies (2015) clarified:

> If critical thinking is seen principally in terms of developing individual skills in argumentation, judgments, and dispositions, then it is very much a general skill, congruent with many disciplines as all disciplines use arguments. If, on the other hand, critical thinking is seen as a matter of being socialized i.e., acting and participating in a discipline then this requires dedicated pedagogies for this purpose, and discipline- specific induction. Depending on one's initial assumptions then, critical thinking is as much a socio-cultural issue as a matter of developing individual skills (p.87).

It seems that both perspectives are largely correct, however, sometimes one view is more important for practical reasons. In Education, teaching criticality sometimes demands an inner view, and sometimes it demands a social view for students to be able to argue effectively and at the same time engage critically in their society (Davies, 2015).

Indeed, the model makes sense of how debates arise, yet it does not decide between them. It offers the potential for moving forward in the important area of critical thinking in higher education considering the aims and the context itself. The model is also found useful and interesting since it caters for the various perspectives offered on critical thinking particularly in higher education; moreover, it helps to locate the relativity of these positions and the scholars who hold them. However, the model provided is only a rough draft and needs further work to provide insight on how critical thinking can be best taught and incorporated in the curriculum taking into consideration the different definitions and movements underpinning the critical thinking debate.

The variety of models presented above provide an overview of what critical thinking is, what skills does it involve and how to develop and imbed it within curricula. Critical thinking models provide a framework for analysing and evaluating information. They help individuals notice their own thinking biases and allow them to try viewing the world objectively while providing guidelines for asking the right questions, reaching logical conclusions, and explaining how they did it. To gain the most benefits, it is important to practice the critical thinking skills involved in the model to realise when to pause and ask questions and when to accept the answers you have and move on (Boris, 2022). Yet, it is worth mentioning that each

of these models has its own merits and drawbacks, and they can be used in different ways depending on the situation and the objective. Thus, their implementation needs careful consideration and planning.

3.9.2 Critical thinking: strategies and methods

Still, research findings have been inconclusive about the most effective instructional methods for improving students' critical thinking abilities. In this essence, teachers and students can use a variety of different strategies to promote critical thinking; however, knowing that critical thinking takes time to develop, the most prominent among these strategies are those aimed at providing an extended training (Halpern, 2014). The previous section (see section 3.9.1) outlined the variety of models used in understanding, teaching and developing critical thinking; however, this section will be dedicated to the discussion of a variety of strategies which can be a guide for teachers who wish to teach and develop their students' critical thinking in their classrooms. The discussion of these pedagogies could be linked to the second research question of the current study as it aims to investigate the prevalent and most used and thought-effective methodologies for the development of students' critical thinking particularly in the Algerian higher education context.

The literature acknowledges numerous strategies and methods developing critical thinking. Duron et al. (2006) argued that critical thinking can be facilitated through practical activities which should be aligned with the student assessment. They claimed that methodological elements that facilitate the development of critical thinking must be taken into consideration. Thus, in order to teach critical thinking, the positive behaviour that is expected for the student to promote this competency should be included in the teacher planning along with the number of activities necessary for that behaviour to take place. In addition to that, Serrano et al. (2005) also insisted on the need for and the significance of focusing on critical thinking in the curriculum design of subjects. They believe that in order to develop critical thinking, it is required to integrate theoretical aspects with professional practice. Furthermore, Moore (2013) highlighted the importance of clarifying from the beginning what is meant by critical thinking in the context of a particular subject to be able then to develop it due to its complexity.

One of the strategies found to develop critical thinking with a great effectiveness is when the teacher asks students questions, and that the level of student thinking should be directly proportional to the level of the questions asked considering that the nature of a question is so

important for not all questions are good questions. When teachers plan their classes, they should consider the purpose, level and type of questions that best helps to achieve the objective set. In addition, all students need experience to address complex questions. It is very important for the teacher to plan their classes well so as to offer students this type of experiences or practices. To do so, teachers should be trained in the formulation of complex questions. This is a difficult task for the teacher, and hence it implies their commitment (Duron et al., 2006).

Olivares et al. (2013) indicated that taking decisions and solving problems are two inseparable strategies which help students to develop critical thinking. They believe that solving a problem conveys that an election has to be made which may help the student to learn how to be critical with their choice. This denotes that solving problems requires skills such as analysing information and evaluating options and by engaging in this process repeatedly, students develop their ability to think critically and make informed decisions. Additionally, considering the consequences of their choices helps them learn how to be critical with their choices and consider multiple perspectives before making a decision. Another study also shows that students who are educated using the methodology of problem-based learning develop a higher balance between inductive and deductive thinking (Olivares & Heredia Escorza, 2012). When students are presented with a problem, they have to consider the consequences of their choices. They have to weigh the pros and cons of each option and choose the one that is most likely to lead to a positive outcome. Moneva et al., (2020) have also added that the problem solving activity is significantly associated to students' critical thinking ability. "Students who have high level of problem solving attitude will become successful ones someday, because they don't get affected in their problems instead, they solved it right away with their critical thinking" (p.138). Thus, teaching problem-based learning is a valuable learning strategy which encourages students by strengthening critical thinking for attainment of the skill to solve problems (Utami et al., 2017).

Fink (2003) reported that to develop critical thinking, educational activities should be appropriate and based on the principles of active learning, which he classifies as follows: first, information and ideas based on the use of primary and secondary sources found in class, out of class or online; second, experience concerning the activities of doing, observing or simulations; and third, reflexive dialogue, which may include writing papers, portfolios or diaries. This researcher believes that whenever possible, one must select direct activities: carried out in a real-life context, direct observation of a phenomenon, reflective thinking, service learning,

diary/reports, and dialogue in or outside the classroom. These practices help students in the promotion of their critical thinking.

Another fundamental method to develop students critical thinking concerns giving students feedback about their learning process within the framework of formative assessment and evaluation, as well as creating opportunities for self-assessment and peer review (Duron et al., 2006). They also pointed out that the teacher should self-assess and review their courses to ensure that effective teaching-learning strategies are helping students to develop critical thinking. Hence, a helpful task could be a follow-up of all class activities, using a teacher diary, with their reflections and in which they include all improvements for future classes. Additionally, from the part of students themselves, self-assessment obliges them to reinterpret their role which can have a positive outcome, stimulating an active and critical attitude towards group work and self-assessment (Siles & solano, 2016). Thus, both teacher assessment and student assessment of their roles in the classroom can encourage students to think and act critically.

Torres et al. (2010) indicated the importance of the feedback particularly the synchronous and asynchronous feedback to develop critical thinking, not only through face-to-face sessions but also through electronic means (quizzes, chats, blogs and forums). Additionally, Lin et al., (2019) supported the potential of technology in collaborative second language education as a way of incorporating critical thinking in the classroom, due to the fact that it is a way to construct arguments by giving "supporting evidence and deepening students' enquiry and understanding through community of inquiry" (p. 304). That is, peers, teachers and technology bond together in the learning process to develop critical thinkers.

Rolón (2014) suggested that for the development of critical thinking: first, teachers need to create an educational environment that allows students to practice dialogue and participation so that the classroom may be converted into a research community. Second, they are required to search for consistency between the objectives of the course, learning activities and assessment procedures. Third, teachers must use the students ' responses as a diagnosis of the depth of their thoughts and the strategies employed to argue and defend them. Fourth, it is appropriate or teachers to analyse the relevance, reliability and strength of the arguments used by students. The researcher hence proposes that critical thinking can be developed by creating a classroom environment that encourages dialogue and participation and ensuring

consistency between course objectives, activities, and assessment procedures without overlooking the analysis of the relevance, reliability, and strength of students' arguments.

I the same line of thought, Sibold (2017) acknowledged the efficacy of classroom discussions in the development of students' critical thinking as he developed a guide which focuses on how to use discussion-based learning strategies to target critical thinking skill development amongst students. The guide consists of "three specific discussion-based learning methods: structured controversy, deliberative discussion, and problem-based discussion, all of which are known to support the development of critical thinking capacity" (p.2). Jones (2014) added that "when they are well structured, discussions can give students more than just the opportunity to express their personal Discussion, Interest, Engagement and Critical Thinking opinions" (p.12). Thus, classroom discussions can help students to connect with and develop new ideas, be open minded to alternative perspectives and decide upon complex problems in collaboration with their peers.

Along classroom discussions, researchers think of debates as one of the best techniques for applying the principles of critical thinking in a wide array of disciplines (Roy & Macchiette, 2005). Debates are believed to encourage students' active involvement; both physically and psychologically. Critical thinking skills can thrive in a learning process that encourages students to debate and listen, speak, read and write because this method addresses new themes and controversy, the development of verbal abilities, and writing (Fuad et al.,2016). Brainstorming also appeared in the literature to help in developing students' critical thinking as Khodadady et al., (2011) indicated in their study findings which suggest that brainstorming can be an effective technique to enhance foreign language learners' communicative and cognitive skills.

Some researchers believe that it has become clear today that critical thinking is not a unique competence; it is rather mastering of a technique, which as such cannot be neither taught nor trained in teaching. All the different activities and methodologies that range from writing activities, debates and cooperative work, questions and enquiries, problem solving, case study, oral presentations by teachers and students, real-world activities, feedback, and drama feature the multiplicity of instructional choices for teachers to teach critical thinking(Grozdanka Gojkov et al., 2015). It is then highly recommended to define a teaching approach that includes different types of activities to develop critical thinking. In this sense, it would be key to design a strategy or a sequence of activities that ensure a meaningful

learning of critical thinking, rather than talking about what best methodologies and activities are suitable or more effective.

3.10 Barriers to the development of students 'critical thinking

Despite the recognised importance of critical thinking and the plentiful methods, models and strategies to support the development of students' critical thinking (see section 3.9), yet a review of research into critical thinking and the problems challenging its development shows that a number of studies have highlighted numerous barriers impeding the development of students' critical thinking. Since this study aimed to investigate the impediments perceived by teachers to challenge students' critical thinking development in the Algerian higher education context, it was deemed most appropriate to explore critical thinking impediments in line with underpinning discussion of the literature. Among these prevailing barriers in the literature are the lack of a detailed conceptualisation of critical thinking, the lack of teacher training, syllabus load and time constraints, crowded classrooms and many other barriers which will be reviewed throughout this section.

First, Ketabi et al. (2013) suggested that teachers' lack of understanding about critical thinking leads to a failure in developing their students' critical thinking skills. This is because if teachers do not have a clear and detailed understanding of what critical thinking is, they will not be able to effectively teach it to their students. Instead, they may rely on simplistic and general ideas about critical thinking that do not provide enough depth or complexity for students to truly develop their critical thinking skills. In addition, some educators may think that they are teaching their students to think critically when in fact they are only helping them to understand a given subject (Choy & Cheah, 2009). Thus, without a detailed understanding of what critical thinking entails, teachers may struggle to effectively teach this concept to their students or even promote its development. As a result, students may miss out on important opportunities for intellectual growth and development. It is therefore important for teachers to analyse their own beliefs, compare them against the academic demands of the university and reflect upon, and adapt their timing and teaching methods before they start teaching their students to think critically (Choy & Cheah, 2009).

By aligning their teaching methods with the demands of the university, teachers can help students develop the skills and knowledge necessary to think critically, solve complex problems and communicate effectively. This does not only benefit individual students but also contributes to the overall success of the educational institution. Therefore, it is essential for

teachers to continuously evaluate and adjust their teaching strategies to ensure that they are meeting their students' needs and helping them achieve their full potential.

According to El Soufi and See (2019), teachers play a crucial role in developing their students' critical thinking skills, but they themselves lack strong critical thinking abilities. Therefore, training programs that focus on critical thinking became a necessity to enable educators develop the skills and knowledge needed to effectively teach critical thinking to their students. To teach critical thinking, the teachers themselves must be trained to think critically. In a study by Reynolds (2016), the results showed that "many teachers believe they were ill prepared for teaching critical-thinking skills prior to taking their first teaching job" (p.110). What is recommended, therefore, is an intensive training of teachers to ensure that teachers have the required thinking skills themselves and the competence to deliver the instruction. In this regard, Ketabi et al. (2013) advocated that appropriate teacher training would enable teachers to incorporate critical thinking into their teaching plans. Henceforth, by providing teachers with the tools they need to teach critical thinking effectively, higher education systems can ensure that students are better prepared for the challenges of the modern world. This can lead to improved academic performance, greater success in careers and personal lives, and a more informed and engaged citizenry.

Similarly, Schendel (2015) in a study of Rwanda's most prestigious institutions indicated that Rwandan students are not improving significantly in their critical thinking ability during their time at university. That is why the researcher (Schendel, 2016) decided to study the teachers' perspectives of the barriers to supporting university students to develop their critical thinking. She found that teachers had a limited understanding of the rationale for pedagogical change and low levels of faculty motivation to implement more labour- intensive teaching methods and therefore these practices are being significantly changed during practice. The results advise the effectiveness of teaching and learning policies only if accompanied by ongoing pedagogical training and support for teachers.

Another impediment to the development of students' critical thinking is explained by Onosko (1991) who reported the minimal planning time allotted to teachers as a hindering factor. He said: "lack of planning time was most frequently identified by teachers (48%) as one of the worst barriers to their efforts to promote students' thinking" (p.25). He has also added that "limited planning time not only affected the planning efforts of teachers individually but made very difficult the exchange of ideas and practices between colleagues"

(Onosko, 1991,p.V). This means that time constraints are a major detrimental for the promotion of students' critical thinking. This view is also supported by Alnofaie (2013) who concluded in her study that teachers are often evaluated by their progress of the content that they are assigned to, which adds pressure to cover it within a given time. She elaborated that: "the teachers who took part in this study explained that critical thinking pedagogy is demanding for both teachers and students" (p.209). The studies presented thus far provide evidence that workload and the lack of flexibility of the context for practising critical thinking appeared to be the major barriers from the teachers' perspective.

Onosko (1991) had also identified the large number of students as one of the prominent barriers to the promotion of critical thinking. Having a lot of students in a class can hinder the development of critical thinking skills. Teachers may feel overwhelmed and anxious about managing large groups, particularly during group discussions. Shell (2001) and Aliakbari & Sadeghdaghighi (2013) have also found that insufficient time to learn new teaching methods, inadequate time in class, and lack of time for preparing and planning the integration of activities including critical thinking were considered as major barriers for the development of critical thinking. In this regard, Shell (2001) reported that: "the respondents in her study reported three major barriers to their implementation of the strategies to promote critical thinking which include students' characteristics (such as resistance, attitudes, and expectations), inadequate time, and the perceived need to cover content and dispense information" (p. 291).

Another descriptive quantitative study which investigated lecturers' perceptions of the obstacles that hinder the development of students' critical thinking skills conducted by Amin and Adiansyah (2018) stated that there are three factors that affect the improvement of the students' critical thinking skills which are lecturers' activities, students' activities and the lack of facilities. The researchers (Amin & Adiansyah, 2018) concluded that "there were many obstacles that the students faced in developing their critical thinking skills; the drawbacks may come from the lecturers, students themselves, frequencies of scientific meetings, and facilities provided by the institution"(p.7).

For the teacher related barriers, the researchers explained that the teacher-centred approach resulted in impeding the development of students' critical thinking skills. Students became passive recipients of a lecture and as a result, their independence, concept mastery,

attitude and thinking skills are not developing, proven by the fact that they obtained low scores in final exams (Danial, 2010; Sardiman, 2014 in Amin & Adiansyah, 2018).

For the student related barriers, the results of their descriptive analysis of the obstacles that challenge students in developing their critical thinking skills show that students' lack of interest in reading (71.10%) and the number of students (60.49%) who lack self- confidence to get actively involved in the classroom discussion are major barriers to students' development of critical thinking skills. These data suggest that the lecturers should improve students' self-efficacy, motivation and confidence to accelerate their classroom engagement.

For facilities, the researchers found that most teachers and students demarcated the lack of scientific workshops, training, and meetings held for lecturers about how to develop students' critical thinking skills in addition to the lack of supporting facilities, such as laboratories and libraries as significant interfering factors to the development of students' critical thinking. In this regard, Boholano (2017) pointed out that the availability of resources is an essential condition to implement critical thinking; for example, school systems must be equipped with ICT resources, and curricula designed to promote collaborative learner-centred environment to which students will relate and respond. The study suggested that these obstacles can be overcome by providing students with more opportunities to practice critical thinking skills and by creating an environment that encourages critical thinking.

A study by Bezanilla et al. (2021) also advocated that although the vast majority of teachers perceive the teaching of critical thinking at university as possible, yet some of them highlighted different hindrances to the teaching and development of students' critical thinking. These are namely the lack of prior training and interest in the subject on the part of the students, the lack of experience and training of teachers on this competence, the complexity of critical thinking itself and finally the lack of interest and support from the university institutions themselves. The study implies that in order to tackle these difficulties that negatively affect the teaching and development of students' critical thinking, it is very important to take into account the opinion of teachers on the difficulties they perceive in this process when establishing curricula and teaching-learning activities to develop critical thinking at university.

An exploratory mixed-method research conducted by Khalid et al. (2021) explored pre-service teachers' perceptions of the barriers believed to impede their efforts in promoting critical thinking skills in their classrooms and further explored possible solutions to overcome

these perceived barriers. Data were collected through an online survey and subsequently a focus group discussion of twenty-two pre-service teachers who responded to the online survey, and subsequently seven pre-service teachers selected for the focus group discussion. The research findings indicated that the difficulties the teachers faced in the promotion of critical thinking were related to teacher preparedness to assess students' critical thinking skills, inadequate background knowledge on critical thinking, and lack of appropriate resources and equipment. Consequently, the study proposed a number of possible solutions to support the development of students' critical thinking skills in the classroom. These include changes in teaching methods, offering teachers special courses in training programs and changing their perceptions towards critical thinking skills.

Another mixed-method study attempted to examine Islamic teachers' thoughts on improving students' critical thinking skills and to identify the factors that influence or hinder their implementation of critical thinking instruction in elementary schools in the Southwestern province of Saudi Arabia. Alwadai (2014) found that the participants reported seven major obstacles, which are namely related to: student ability (being a major obstacle), then teaching methods, classroom structure, Saudi society and the school community, pre-service teachers preparation programs and in-service teacher professional developmental programs, and the Islamic studies curriculum as the least influential obstacle. These findings were also consistent with the findings of several studies (Allamnakhrah, 2013; Alwehaibi, 2012; Stedman & Adams, 2012) emphasising the teachers' failure to teach critical thinking skills to their students due to their own lack of knowledge and understanding of critical thinking and its appropriate implementation in classrooms.

According to Alwadai (2014); Allamnakhrah (2013) and Aliakbari and Sadeghdaghighi (2012), some teachers believed students have no interest in learning or developing their critical thinking, particularly for it is not required when taking the national exams. They indicated that teachers are sometimes willing for their students to engage and participate actively in critical thinking courses, but they found students to be uninterested and indifferent during critical thinking practice and activities. Students preferred direct activities which required easily targeted answers and to enjoy their learning time through fun and non-complex activities. Moreover, Saudi teachers have also pointed out that adequate facilities have not been supplied in most educational institutions which leaves students and teachers with inadequate equipment, lighting, safety, and classroom size (Alwadai, 2014).

Moreover, Bataineh and Alazzi (2009) indicated several difficulties faced by teachers of the social studies in Jordanian secondary schools. These difficulties range from large class sizes, pressure of state exams, difficulty to vary methodologies and cover the entire textbook, lack of equipment and lastly the absence of teacher educational programs about critical thinking. First, for class size, the authors explained that the class size was too large that in one classroom teachers find more than forty students and this they think hinders the effective teaching and development of critical thinking as it makes it difficult to vary methodologies and cover the entire textbook. Second, the teachers expressed their opinion that too much time was required to cover the content in the textbooks, which left little time for critical thinking skills development. In addition, teachers' manuals did not provide strategies to aid the teachers in critical thinking activities. Third, Bataineh and Alazzi's (2009) study also revealed that the school equipment within Jordanian schools do not foster critical thinking. Surprisingly, when teachers criticised the lack of materials that they had for teaching critical thinking, they found that the ministry guidelines did not require critical thinking as part of the learning process. The teachers in this study also indicated that school equipment was insufficient for teaching critical thinking. Participants expressed the need for more books in the library for the students, as well as a need for overhead projectors, VCRs, and televisions. Fourth, the teachers in the study have also advocated the absence of teacher educational programs about critical thinking. Bataineh and Alazzi (2009) stated that teachers attribute their limited knowledge to the absence of teacher educational programs that allow them to learn more about critical thinking. The teachers seem to have a deficiency when it comes to understanding critical thinking and how to implement it within classrooms.

The teachers also added that universities do not address teaching critical thinking, and limited funding does not allow for preparation of professional development courses (Bataineh & Alazzi, 2009). The study results indicated that Jordanian secondary school social studies' teachers are not familiar with the definition and teaching strategies of critical thinking; the Jordan Ministry of Education Guidelines did not require teachers to teach critical thinking. In addition, teacher manuals for the state-required textbooks provided only detailed content information, with only minor references to teaching critical thinking. Previous research, conducted by these researchers on middle and high school students in Jordanian public schools, supported the finding that students do not acquire critical thinking skills from their public school education in Jordan. Another difficulty to support students' critical thinking development from the teachers' perspective in Bataineh and Alazzi 's (2009) study was the

pressure of state exams and the students' negative attitudes and uninterest towards critical thinking. Passing the state exams with a high score is viewed as extremely important by most Jordanian students in secondary schools, because it is the basis on which students are admitted to colleges and universities. Yet, these exams mostly do not serve students' critical thinking development.

Another important finding of this study (Bataineh and Alazzi, 2009) has also indicated that Social studies instruction that incorporates discussion of controversial issues relies on critical thinking skills. Yet, most study participants state that they do not have any problem with teaching controversial political topics. but they maintain a neutral position or try to avoid addressing dubious political issues. This avoidance of controversial issues designate that critical thinking skills are not being stressed by social studies' teachers since this area of instruction would not rely on the use of critical thinking and higher order skills to discuss such topics. These teachers blame the universities and policy makers for not making advanced teacher training programs during their vacation time and to support state universities with funds that offer these teachers with professional development courses.

A study by Akhter (2019) suggested that cultural factors such as lack of critical thinking tradition in Bangladesh, teacher-centred classroom practices, and students' reluctance to question authority are some of the major barriers to the development of critical thinking skills among Bangladeshi second language learners at university. The researcher suggests that teachers can help students overcome these barriers by fostering a culture of inquiry in the classroom, encouraging students to question authority, and providing opportunities for students to engage in critical thinking activities. Additionally, she recommends that teachers should incorporate culturally relevant materials into their teaching, provide clear instructions for critical thinking tasks, and also provide feedback to students on their critical thinking performance. What is needed is that teachers help students overcome cultural barriers to critical thinking by developing critical cultural awareness in the classroom.

This section examined the prevalent barriers to the development of critical thinking in different contexts and through different research approaches. These barriers ranged from the lack of teacher training and a detailed conceptualisation of critical thinking, curriculum load, time constraints, class size and student related barriers. It should be noteworthy that to confront these barriers, it is argued that : "though there is no logical or necessary sequence of attack when confronting these barriers, due to their interactive nature, department, school and

system-wide efforts to improve students' higher-order thinking are more likely to experience success if all barriers are tackled" (Onosko, 1991, p. 3). This means that these barriers are not isolated issues. They are interconnected and can reinforce each other, making it difficult to address them individually. For example, if teachers are not trained in how to develop higher order thinking skills in their students, they may not be able to design appropriate curriculum or assessments that promote these skills. Therefore, tackling all the barriers to improving higher-order thinking skills simultaneously through classroom and system-wide efforts is more likely to lead to success than addressing them individually.

3.11 Conclusion

In conclusion, the critical thinking debate is a complex and multifaceted issue that requires careful consideration and analysis. This chapter has comprehensively explored the various debates surrounding critical thinking, including the different proposed definitions, the generalist and specifist positions, the different models and strategies for the development of students' critical thinking, and the barriers that impede teachers from supporting their students' critical thinking skills. Ultimately, it is clear that critical thinking is essential for success in today's world, and it is necessary for educators to work towards developing their students' thinking skills. By considering the debates surrounding critical thinking, understanding the concept and implementing effective strategies for its development and reflecting on the major hindrances, teachers can help their students become more thoughtful, analytical, and engaged members of their society. The current research is likely to help us understand Algerian teachers' understanding of critical thinking and their perceptions of what facilitates or hinders the development of students' critical thinking in the Algerian higher education context.

Chapter Four: Research Design and Methodology

4.1 Introduction

The previous chapters (chapters one and two) discussed the Algerian higher education system, the reforms that took place from the first establishment of an Algerian university in1909 until the adoption of the BMD system in the last two decades and the status of critical thinking and its development within that system. Chapter three however discussed the current debates surrounding critical thinking: its definition, nature, importance development and finally the challenges involved in its development. The current study focuses particularly on the Algerian context where I investigate the concept of critical thinking in relation to the reforms to the higher education system (Practical guide of the BMD system, 2011) that took place recently at the university in response to this legislation/policy.

What is highlighted from the reviewed studies is the need for empirical research to gather rich insights of teachers about critical thinking, the extent to which these teachers support the development of students' critical thinking and the hindrances they believe impede students' critical thinking development. The study thus, aims to explore issues related to definition, position, development and methodologies involving critical thinking as these matters are under-represented in research in the Algerian higher education context.

Therefore, this chapter will be dedicated to outlining the research design plan referring back to my research questions and how I attempt to address them through my methodology. After outlining key questions, I will consider the basis on which I approach the research by introducing the epistemological and ontological perspectives that are the foundations for the research design of the current study. The chapter will aim also to explain the research design, how data will be collected, issues related to the research design such as validity and reliability and the processes of sampling, data collection and analysis.

4.2 Research Questions

The proposed study poses two major research questions which are as follows:

Research Question 1:

- How do teachers within the Algerian higher education context conceptualise critical thinking?

The first research question explores the teachers' understanding and conceptualisation of critical thinking in the Algerian higher education context. It focuses particularly on perceptions of university teachers about the nature of critical thinking, its definition, constituents and main characteristics.

Research Question 2:

- To what extent do Algerian university teachers believe they support students' critical thinking development and how do they believe they support this development?

The second research question seeks to understand the extent to which the teachers believe they support their students' development of critical thinking in the Algerian higher education context. It serves also to investigate how students' critical thinking is fostered in this higher education setting by exploring the means through which the teachers support their students' critical thinking development. This question focuses on understanding whether critical thinking is absent in the classroom and the attempts of teachers to integrate and develop it in their practices.

4.3 Research Design

A research design relates the research objectives and questions to the processes for empirical data collection and analysis to analyse and make conclusions drawn from the data (Yin, 2009). A sound research design thus reflects a clear understanding of what needs to be done and how it ought to be done. Without these sets of understandings there can be no confidence that the research has been properly conducted. Therefore, it is important for the success of this study to fully justify and explain the research design (White, 2011). This section will therefore be devoted to presenting the positioning of the research within its ontological paradigm and justifying the chosen methodology adopted in the current study.

4.3.1 Research paradigm

To establish the foundation and framework for the current study, it is a requirement for the researcher first to acknowledge their positionality within the ongoing debates in the field of research between the interpretivists and positivists. This divide in perspectives has been discussed by various scholars such as Kroeze (2012), Hammersley & Traianou, (2012) and (Rahman, 2020) who offered that the Positivists believe that the social world is comprised of concrete and unchangeable realities that can be objectively measured. On the other hand, interpretive researchers disagree with the positivist belief and argue that reality is socially constructed by humans and can be subjectively understood and changed.

Accordingly, in order to be able to gain insights into the research questions posed, and to support analysis of the concept of critical thinking and the underpinning views; it is essential that I, as the researcher, consider my methodological approaches and evidence them.

The current research looks mainly to provide a more detailed understanding of and justification for teachers' conceptualisation of critical thinking and an exploration of the related issues of definition, position and evidence in the Algerian higher education context. The study also seeks to investigate the extent to which these teachers believe they support critical thinking development at the university level, and the means by which they do this. These experiences and perceptions relating to the nature of critical thinking are embedded within certain social realities and do not come from a single ontological position. Thus, because of the varied and complex nature of my research which centres on individual experiences, perceptions and understandings of reality, my study is based on a form of interpretivism given that knowledge is contextual, provisional and socially changing (Creswell, 2003) and that individuals have unique perspectives shaped by their experiences, beliefs, and values (Rahman,2020).

Regarding the epistemological basis, this research is centred upon the idea that contextualised knowledge is not generalisable because there are multiple realities. The focus is on exploring different viewpoints rather than seeking universal truths or generalisations (Hammersley, 2012). This approach allows for rich descriptions and deep insights into participants' lived experiences while acknowledging the subjectivity inherent in research. Therefore, within their different social environments, participants will bring knowledge that is culturally, socially, and experientially different and since this research is interested in understanding and perceptions of teachers about the nature of critical thinking and its complexities, I take an interpretivist approach to my research. The interpretivist approach accepts that the insights I can gain from the data that I collect are based upon experience and do not attempt to find generalisability. Interpretivists argue that we cannot understand why people do what they do, or why particular institutions exist and operate in characteristic ways, without grasping how those involved interpret and make sense of their world; in other words, without understanding the distinctive nature of their perceptions, beliefs, and attitudes. As a result of this stance, normally, interpretivists adopt or recommend qualitative methods, such as ethnography, in-depth or unstructured interviewing, or analysis of documents in the manner of the historian or the literary critic (Hammersley, 2012). A literature review of the current study and a consideration of the nature of the research problem and objectives along with the researcher's worldviews and positionality then direct the current research paradigm.

4.3.2 Research methodology

Concerning the choice of the research methodology, the decision to choose a qualitative research design was informed by the necessity to ensure that the evidence obtained enables the researcher to answer the initial research questions as unambiguously as possible (De Vaus, 2001, p. 9). This choice was made as qualitative approaches are used to analyse the behaviour, perspectives, feelings, and experiences of people and what is at the core of their lives (Fraenkel & Wallen, 2009), thus aligning with the purpose of the present research study. It also ensures the recognition of the subjective elements of the research process; it is not limited to one perspective on social subjects and often generates unexpected insights through the open-ended nature of enquiries (Percy et al., 2015). Compared with quantitative research, the results of qualitative research can more appropriately be reported using a flexible structure, concerned only with interpretations of the collected data (Creswell, 2013). Seeking to interpret and explore social and cultural and, therefore, conceptual phenomena that defy objective measurement, qualitative research is idiographic; meaning it can be considered to be specific, subjective and contingent (White, 2011, p.22). Hence, this study will involve collecting and analysing qualitative data on critical thinking conceptualisation and development in the Algerian higher education context to provide a more complete picture and an in-depth knowledge of the participants' viewpoints and enable the researcher to reach an understanding of the differing perspectives (Harding, 2019) involved in understanding the nature of critical thinking, the extent to which its development is supported and possibly the challenges interfering in students' critical thinking development.

Therefore, with a qualitative interpretivist approach visualised in figure 4.1, the researcher will look at the experiences and perceptions of a small number of people ensuring their rich and detailed responses to the interviews fully answer the research questions posed. These questions aim to go beyond evaluating critical thinking and instead seek to gather authentic, precise, and meaningful perspectives on critical thinking in order to identify important implications for teaching and learning in Algerian higher education. The qualitative study is a valuable means by which we can develop a full understanding of a phenomenon, in this research attitudes and practices regarding critical thinking development in Algerian higher education, and so gain an understanding of this complex phenomenon and key insights into local practices (Cooper & Morgan, 2008; Silverman, 2015). The choice of this type of research design is informed by the need to develop an in-depth understanding of academics' conceptualisation of

critical thinking and its development among students within the Algerian higher education context and particularly at Oum El Bouaghi university.

4.3.3 Sampling

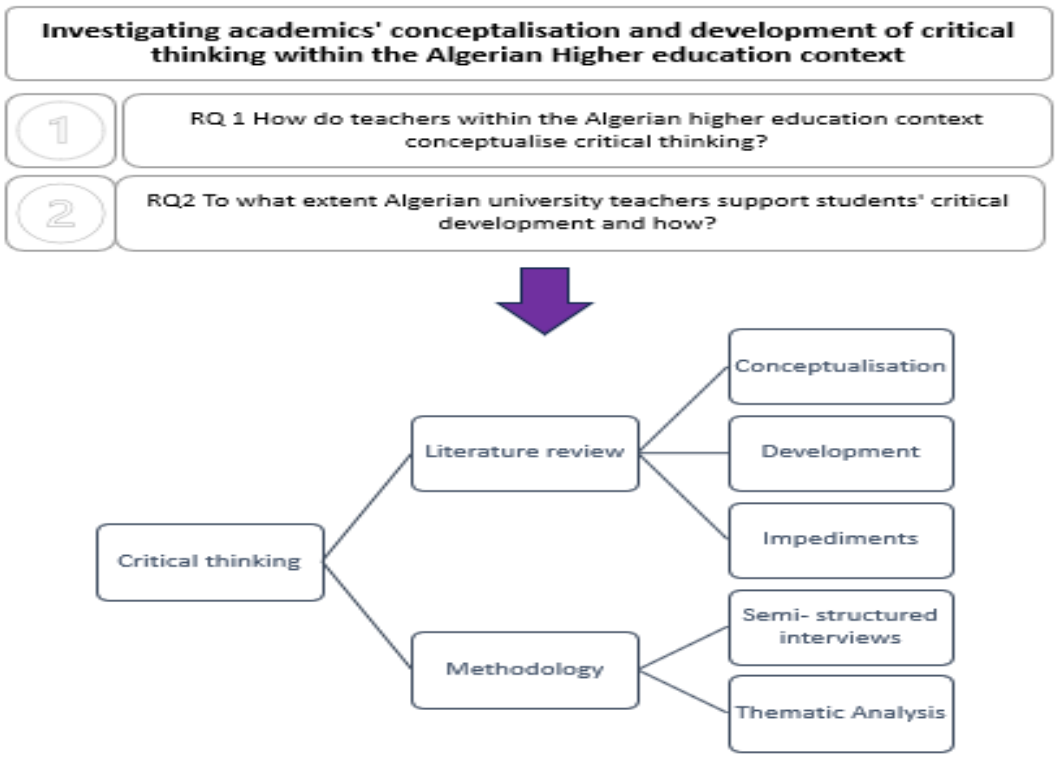
The current study is based on a sample of teachers' from Larbi ben Mhidi university, Oum El Bouaghi in Algeria. According to the University of Oum El Bouaghi website (2023), Oum El Bouaghi University was originally created as a Teacher Training School in 1983, became a National Institute of Higher Mechanics (INSM) in 1984, then a University Centre composed of four Institutes in 1997 taking the name of the martyr Larbi Ben Mhidi in November 1999. The University Centre was promoted to a university in 2009 adopting the BMD system (see section 2.3). At present, the University is constituted of 7 faculties and 3 institutes located in five campuses including three in the city of Oum El Bouaghi, a faculty of Applied Sciences in Ain Beida and a Technology Centre (ISTA) in Ain M'Lila. The training offered is diversified at all levels leading to bachelor's and master's degrees as well as to PhD degrees and in different specialties and much more social, humanities and literary disciplines. It is renowned for its academic achievements in fundamental research including mathematics, natural sciences and life sciences, as well as in the field of the human and social sciences and the economic and commercial sciences. Larbi Ben Mhidi University of Oum El Bouaghi develops cooperation with foreign universities in Europe as well as Arab and American countries, promoting exchanges and scientific collaboration.

In order to gain high quality data from the current study, it is important to prioritise a substantial sample although as Patton (1990) highlights, "There are no rules for sample size in qualitative research. Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources" (p. 184). The number of participants in this sample is therefore relatively unimportant. What is more important is the potential of each informant within the case study to aid the researcher in developing theoretical insights into the context being studied, critical thinking, its development in higher education and the perceptions of teachers to its development and its hindrances. Participants were therefore recruited through a combination of purposive sampling (they had to be teachers in Oum El Bouaghi university) and snowball sampling (contacts through my previous teachers at the university). For the researcher, it was hard to find more cooperative teachers willing to participate in the study and thus adapted to the circumstances.

Following this line of thought, the researcher interviewed teachers from different disciplines. The current study researcher chose four academic disciplines that belong to the field of social sciences and language education, they are namely: Sociology, Psychology, Political Sciences and English Language teaching. These are areas that involve skills of analysis, communication, understanding complex issues, questioning assumptions, solving problems and argumentation which are important in the development of critical thinking. The reason behind choosing such a sample is to gain insights of different teachers from different disciplines to enrich the debates underpinning the teachers' understanding of critical thinking in the Algerian higher education context and because of the great number of teachers and educators who belong to these fields in opposition to the other domains such as STEM specialities which were thought to participate in the study. So, this choice is purposeful depending upon the availability of these disciplines in Oum El Bouaghi University and the interest of the researcher to understand this context particularly. The population is comprised of teachers who teach English language at the department of English language at Oum El Bouaghi University and other educators from the social sciences disciplines and from departments teaching psychology, sociology and political sciences. Twenty invited teachers were emailed and reached, but only sixteen teachers in total accepted to participate in the study and thus represented the research sample.

Figure 4.1

A Visual Representation of the Research Design



4.4 Data Collection

4.4.1 Interviews

According to Yin (2009), interviews serve as the fundamental means to bring out the data needed to answer the research questions in the case study. The primary source of data in qualitative research is the interview. Secondary data can be collected from various sources, for example, annual reports and financial statements, public records, press releases, newspapers, organisation charts, and institutions' website (Myers, 2009). The researcher in the current study therefore opted for interviews as an instrument to collect the necessary data. These interviews are designed based on the reviewed literature aiming to explore the different views and understandings of university teachers about critical thinking and the extent to which they support its development in the classroom and also exploring the hindrances believed to obstruct its development. Perceptions of lecturers are important for the research, as they will help the researcher gain insights about academics' views of the research core concepts as of

critical thinking and the Algerian higher education. The aim of this qualitative research instrument is thus to obtain an in-depth understanding of the explored problems or phenomena (Creswell, 2013) and with this in view, interviews provide more in-depth knowledge as the researcher has the opportunity to deepen the discussion with the participants.

All interviews will be semi-structured (see appendix F for full list of questions of the interviews). This approach will enable the interviewer to question participants in a consistent manner while also allowing for exploration in spontaneous and potentially fruitful directions (Shank and Brown, 2007). Hence, they will allow space for interviewees to take the inter-viewer down avenues not considered before (Smith and Sparkes 2016). Such interviews, as indicated by Robson (2011), allow a researcher to prepare questions in advance (these will be discussed in section 4.4) and provide the interviewees with some flexibility to expand on their answers. Thereafter, the interviewer will have the opportunity to ask questions and tie threads together through reading body language and intonation to elaborate on or discuss the subject matter. It is of course possible that the researcher could be misled by biased or untruthful data, but the quality and validity of the collected interview data can be enhanced as Kvale (2009) suggests that throughout the interview, it is crucial to question the statements of interviewees, to ask for extended explanation and illustration. Moreover, wherever possible during the interview, informants' ideas should be explicitly elucidated by the interviewer so that the participant can correct, modify, or add to the analysis. Therefore, the semi- structured interviews will enable collection of qualitative data that will allow the researcher to explore and identify participants' perceptions and expectations with regard to their conceptualisation of critical thinking.

4.4.2 Participants

The present study included 16 educators teaching in undergraduate and postgraduate programs at the University of Larbi Ben Mhidi Oum El Bouaghi, Algeria. 8 of these respondents were male and 8 were female; other information on respondents is summarised in Table 4.1, and the respondents are represented by pseudonyms for anonymity. Further details of the respondents are presented in Chapter 5 where the findings from the interviews are presented.

Table 4.1

Interviewees Profiles

PARTICIPANT	GENDER	DISCIPLINE	QUALIFICATION	EXPERIENCE	Teacher's role: Teacher centred approach TC/ Learner centred
1 SELMA	SHE	Political Sciences	Master	04 years	LC
2 RIAD	HE	Political Sciences	Master	10 years	TC
3 DJALAL	HE	Sociology	PhD	07 years	TC
4 RAZIKA	SHE	Sociology	Master	12 years	LC
5 MUSTAFA	HE	Sociology	PhD	20 years	TC
6 MOUHAMMED	HE	English Language	master	09 years	TC
7 AMINA	SHE	Political Sciences	PhD	16 years	LC
8 MAHMOUD	HE	Psychology	Master	08 years	TC
9 OMAR	HE	Psychology	PhD	13 years	TC
10 SOUAD	SHE	Psychology	PhD	10 years	TC

11 ABDULLAH	HE	Political Sciences	Master	19 years	TC
12 SOUMIA	SHE	Sociology	Master	04 years	LC
13 HANAN	SHE	English language	Master	10 years	TC
14 JAMILA	SHE	English Language	PhD	27 years	LC
15 KAMAL	HE	Psychology	Master	09 years	LC
16 DALIA	SHE	English Language	Magister	14 years	TC

Note. The table represents teachers' answers to questions about their gender, discipline, qualification, experience and their roles in the classroom. These answers helped contextualise and make profiles for each teacher and group them in similar categories.

4.4.3 Ethical considerations

Ethical issues are paramount important matters (Farrimond, 2013), as this research study involves human participants, it has been necessary to seek ethical approval by completing the University's ethical approval process and ensuring that the participants are not harmed by their involvement. In this respect the researcher's approach has been influenced by the guidance of Orb et al. (2001) who stated that: "ethics pertains to doing good and avoiding harm. Harm can be prevented or reduced through the application of appropriate ethical principles. Thus, the protection of human subjects or participants in any research study is imperative" (p.93). Ethical approval is important as ethical issues that may rise from interviews can be unpredictable, yet the researcher needs to be aware of sensitive issues and potential conflicts of interest (Orb et al., 2001). The present study was approved by the Ethics Committee at the School of Education in Durham University (Appendix E) prior to the data collection of the pilot study and the main study.

In using semi-structured interviews as the key research method, the researcher has been cognisant of the need to respect confidentiality, acquire informed consent, and to protect participants' privacy. Such interviews may contain material referring to a recurrence of "old

wounds" and may involve sharing of secrets, the researcher therefore respects the individuals participating in this research (Orb et al.,2001). Thus, before agreeing to participate, the researcher provided participants with open and transparent information about their participation, the purpose of the study, the collection of data and all related procedures. Participants were also fully informed about both the outcomes from their choice to participate voluntarily, and their ability to withdraw from the study at any point for any reason (Joe et al., 2016) without prejudice.

All participants taking part in the interviews were informed about the study through the informed consent forms (see appendix B), stating the purpose of the study, presenting the interview guide and stating the approximate duration of the interviews. Participants in the interviews were informed in advance, both through a written consent form and verbal explanation, that their interviews would be recorded. They were also made aware of how their data would be utilised in my research and that their responses would be included in a written thesis without any personal identification. They were also ensured of confidentiality and anonymity and assured that the interview data would be kept strictly confidential.

To ensure the confidentiality and security of the interview data, pseudonyms were assigned to the respondents when their quotes were cited. No identifying information about the interviewees were included in the presented information. The audio recordings of the interviews were stored on a password-protected personal computer, which only I, as the researcher, had access to. The names of the interview respondents were also saved as pseudonyms and not linked to their responses.

4.4.4 The Interview Schedule and the Pilot Study

Approval from the ethics committee of the School of Education of Durham University (Appendix E) was received in February 2022 prior to the data collection of the pilot study and the main study using the interviews. A semi-structured interview guide for the participating teachers was designed to help in collecting data. The interviews contained open-ended questions where teachers could speak openly about their understanding of critical thinking, with follow-up questions and probes where necessary to clarify and encourage teachers to expand through further explanation and illustration. The research questions and the review of the literature helped to identify the areas to be explored and formulate the interview guide.

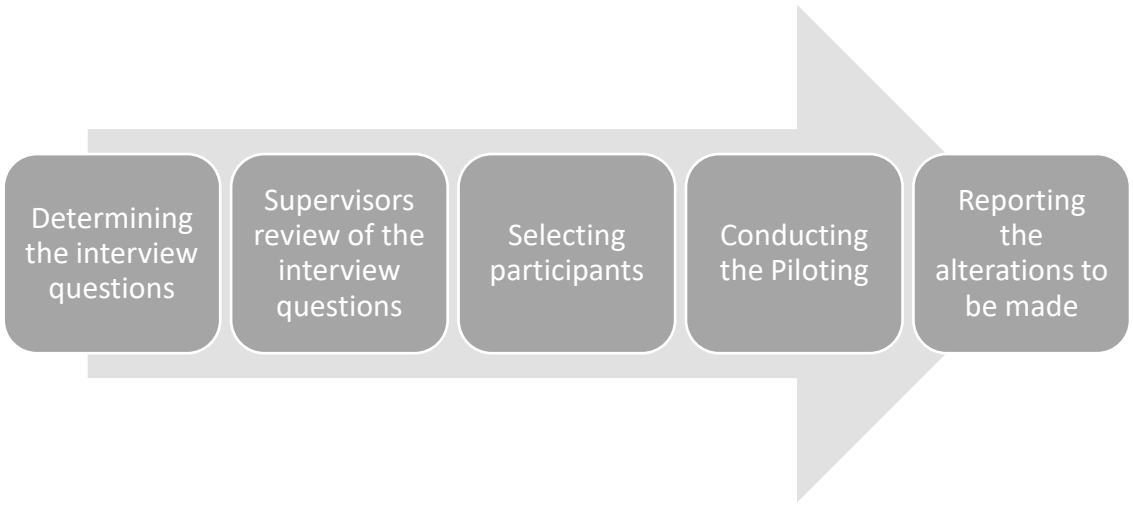
The interview guide was comprised of five parts (See Appendix F). The first part involved questions concerning the participating teacher's background including their qualifications, experience and academic disciplines. The second part asked teachers questions about their roles and teaching objectives in the classroom; the third part inquired about these teachers ' understanding of critical thinking and its importance. This part aimed to investigate how the teachers conceptualised critical thinking and to find out what skills, dispositions or criteria the teachers believed were fundamental in the critical thinking process. The fourth part aimed to highlight the extent to which the teachers were supporting students' critical thinking development in classroom, and the means by which supported this development This part therefore focused on the teachers' potential to teach students' critical thinking, to develop this way of thinking in their students, and the teaching strategies or methodologies that they used for the purpose of developing their students' critical thinking. The last part of the interview guide posed questions about the hindrances that the teachers saw as inhibiting their support of the development of students' critical thinking in their classrooms.

The interview guide was pilot- tested to confirm that the questions were suitable for collecting valuable data, addressing the research objectives, and to practice interviewing (See Appendix F for the first copy of the interview guide). A pilot study was chosen as it can help identify if there are flaws or limitations within the interview design and will enable necessary modifications to the major study to be made (Kvale, 2007). According to Harding (2013), the importance of piloting qualitative interviews may not be immediately obvious as the quality of the interview guide tends to improve as the interviews progress. However, he suggests that piloting the interview questions and making necessary adjustments to the interview guide before starting a major study can be extremely advantageous which is the case for the current study as piloting helped the researcher to test and strengthen the questions and to gain some practice in interviewing (Majid et al., 2017). Figure number 4.2 presents the steps involved in the pilot study of the interviews.

- Determining the interview questions
- Supervisors review of the interview questions
- Selecting participants
- Conducting the Pilot
- Reporting the alterations to be made

Figure 4.2

Steps Involved in the Pilot Study



The piloting was conducted in April 2022 and three teachers participated in the process online via zoom meetings scheduled according to the participants availability and convenience of circumstances. A letter of informed consent (see appendix) was given to each participant and the researcher obtained approval from all three informants. The interviews were recorded automatically through the Zoom platform. The interviews ranged in time between approximately 35 to 45 minutes. The purpose of the pilot study was to assess the appropriateness of the questions and offer initial feedback on the feasibility of the research. Additionally, it allowed the researcher to gain proficiency in conducting in-depth, semi-structured interviews and establishing a connection with the participants. Significantly, the pilot study helped the researcher acquire interviewing skills and understand how conversations may flow (Majid et al., 2017).

During the interviews of the pilot study, the participants were asked the same set of questions, and they were given the opportunity to answer the interviewer's questions freely; the researcher then used probing questions to prompt further discussion and information giving. The interviews were carried out in the Arabic language, as the first language of the interviewees was thought to lead to a more comfortable discussion and to facilitate respondents' expression of their thoughts and feelings (Cortazzi et al., 2011). The questions were not asked in a specified order but rather they followed the flow of the discussion. Through the pilot study, I used probing whenever I felt it necessary to seek clarifications or further elaborations from the interviewees. In fact, each interview required customised

questioning as it was impossible for the researcher to precisely determine the answers of the informants without this further probing. After completing the pilot study, the researcher had the opportunity to transcribe verbatim and translate the scripts into the English language. The scripts of the English version were then summarised and analysed to identify the initial codes for a thematic analysis. It should be noted that the pilot interviews were not included with the main study data. Undoubtedly, the pilot study played a crucial role in helping the researcher refine their interviewing strategies before commencing the main study phase.

Based on the results of the pilot study, more changes were made to the interview guide. Some questions were rephrased and ordered in a more logical sequence, and additional probing questions were added to ensure that participants could provide more detailed responses and to prevent misinterpretation on the side of the interviewees. For the main study, ten open-ended questions were included to gain a better understanding of the participants' viewpoints.

4.4.5 Data Collection Procedure

After designing the interview guide, conducting the pilot study and making the necessary modifications, the researcher started the main study interviews at the beginning of May 2022 and finished the process by the end of July 2022. After few interviews the researcher started to notice some similarities and overlaps in codes and prospective themes. The researcher began to question how many interviews needed and if a second interview with each participant was necessary but understood that there should be no predetermined number of interviews to be conducted, and only stop the process if having enough data to answer the research questions. Eventually, the interviews were conducted with 16 tutors who provided rich data for the study. Copies of the participant information sheet, declaration of informed consent, privacy notice, debriefing sheet and the interview guide are found in Appendices A, B, C, D and F respectively.

After the initial contact of invitation, the researcher contacted the teachers via email to inform them of the aim of the study, how the collected data would be used and to inquire whether they are still willing to participate in the research. The interviewees were also reminded that their participation would be voluntary and that they would have the right to withdraw from the research for any reason and at any time during the study. They were also assured that once the scripts were anonymised, they could not be traced back. The participants were also provided with a consent form, an information sheet and the interview guide. These letters also specified the purpose of the study, the questions to be asked and the approximate

duration of the study. Before interviews were conducted, participants were informed that the interviews would be recorded, as stated clearly in the consent form. Additionally, they were also informed about how the researcher would make use of their data in the study and that their responses would be included in a written thesis without revealing their identity to ensure confidentiality.

Having obtained the approval of the teachers to be interviewed, the researcher made appointments with the participating teachers and arranged the online meetings via zoom or teams to conduct the interviews. The interviewer and interviewee were both afforded a degree of ease and comfort by conducting the interview remotely (Lobe et al., 2020). The researcher initially encountered difficulty in obtaining a sufficient number of informants, and so resorted to snowball sampling to increase the sample size. This proved to be a challenging process, as many teachers had to be contacted, but few accepted invitations were received. By the end of the data collection period that lasted around three months, the researcher was able to interview a good sample of 16 teachers from Oum El Bouaghi university and let that the data were rich and the participants had provided enough detailed data to answer the research questions.

Before each interview session, the researcher reiterated to the interviewees the aims of the study and the purpose of the interview. The researcher also informed them about how their data would be used and again assured them of confidentiality and anonymity. The participants were also informed about the duration of the interview. Additionally, consent was requested from all participants for audio recording, with only two teachers declining while the other fourteen agreed to be recorded.

The researcher began each interview by introducing the topic of the research, then she started a friendly conversation and moved to checking the background information with the interviewees and posing some warm-up questions (see appendix F) before moving on to the main questions. The researcher used the interview guide to pose the same questions for the interviewees. Nevertheless, the sequence and wordings of the questions varied during the interviews respecting the flow of the discussion and prompting further elaboration and clarification of responses from the participants by customising responses to the information they individually presented. This approach allowed the researcher to confirm her comprehension of the interviewee's responses and prevent any miscommunications or misunderstandings.

The researcher had to follow guidelines when conducting the interviews to yield valuable insights during the process of data collection. First, it was crucial to exhibit a gentle, approachable demeanour and through this approach to allow the interviewees to express themselves fully. This involved giving them ample time to think and speak at their own pace, as well as respecting pauses (Taherdoost, 2022). Second, it was imperative to actively listen and comprehend what they were saying in order to grasp their viewpoint completely. Additionally, being receptive to novel ideas and unexpected answers from the interviewees was essential (Doody & Noonan, 2013). However, it was equally important to steer the conversation back on track if they digressed off-topic. Third, the researcher had also to compare and contrast the interviewees' responses as this can aid in verifying the accuracy and reliability of their answers (Taherdoost, 2022). Finally, interpreting responses and requesting examples from these interviewees helped to ensure a comprehensive understanding of the participants' perspectives. At the end of the interviews, the researcher expressed gratitude to the participants for their valuable contribution to the study and asked if they would like to receive a copy of the interview transcripts. Additionally, they were informed that if they wished, they would be provided with the study findings.

4.5 Data Analysis

4.5.1 Data Transcription and Translation

As indicated above, 16 teachers were interviewed in this study with each interview session lasting for about 35 to 45 minutes. Only 14 interviews were audio- recorded as two participants refused recording and the researcher opted for the note taking method to record these interviewees' responses. The researcher started preparing the data for analysis by beginning with the transcription of the interviews, then moving on to checking the accuracy of the scripts followed by the filtering of the irrelevant information and finally the translation. First, for the interviews that were recorded automatically through the Teams and Zoom applications, Microsoft Word was used as a tool that facilitated the transfer of the audio files to a written form and the researcher had only to check the accuracy of the data and filter irrelevant data such as pauses, emm, eh and aaa words and repeated phrases. For the other two interviews which were not recorded, the researcher re- read and checked the notes again. Second, the researcher compared all notes to the transcripts to ensure that all relevant data were included. Then, the researcher checked for any discrepancies between the notes taken and the transcripts and made sure that all the data were accurately represented in the transcripts. Finally, the transcripts were translated from the Arabic into English as a

preparation of the scripts for the data analysis. By transcribing and translating the interview data, the researcher was able to gain a deeper understanding of the data and familiarise herself with it to develop more meaningful insights (Braun & Clarke, 2021). This also enabled the researcher to ensure that the transcription and translation were accurate and relevant to the present study and the context of Oum El Bouaghi University.

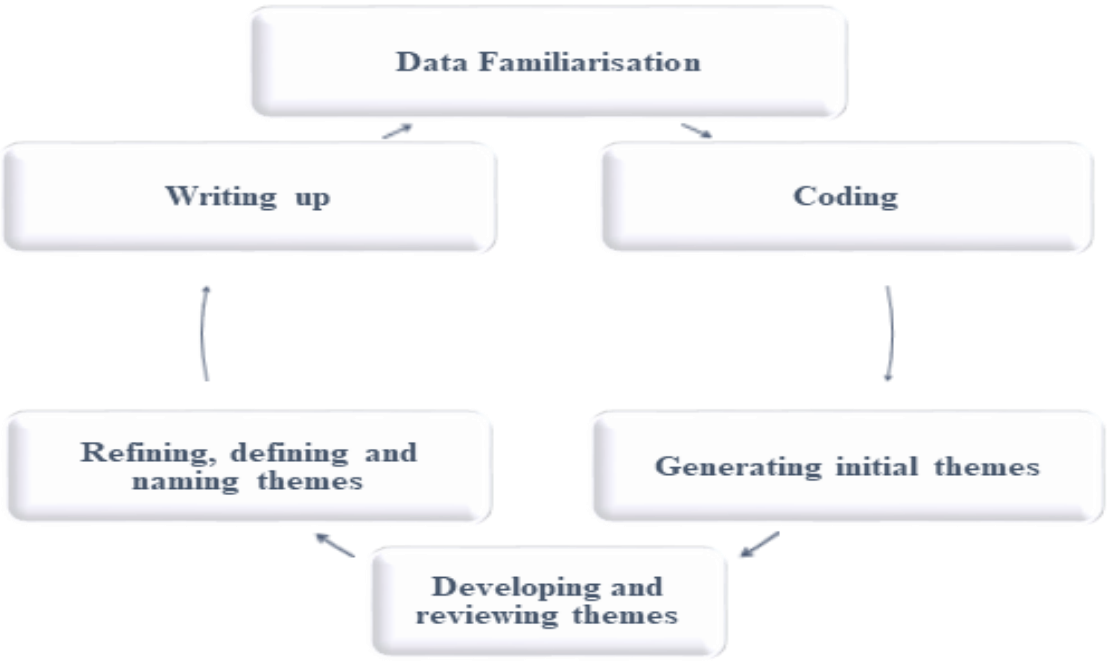
4.5.2 The Data Analysis Process

The process of data analysis, as Bogdan and Biklen (1998) have pointed out, is the process of systematically searching and arranging interview transcripts, filed notes and other materials that the researcher collects to increase their understanding of them and to enable the researcher to present what they have discovered to others. Thus, this process entails handling data, arranging and combining it, identifying patterns, determining significance and insights, and selecting information to communicate to others. For the current study, I employed thematic analysis to identify recurring patterns and themes from the qualitative data. In this study, thematic analysis was driven by the presented research questions and the constructivist paradigm. Thematic analysis was chosen for this study since it provides an in depth understanding of the research topics and their relationship as an inductive analysis will be presented for the themes and patterns emerging from the interviews. Thematic analysis is an analytical method that provides a transparent and systematic approach to interpreting qualitative data (Joffe, 2012). Braun and Clarke (2021) also defined thematic analysis as "a method of qualitative analysis, widely used across the social and health sciences, and beyond, for exploring, interpreting and reporting relevant patterns of meaning across a dataset. It utilises codes and coding to develop themes" (p. 224). Yet, it should be noted that "conducting a thematic analysis is not about working through a series of steps, rather it is about the researcher's 'reflective and thoughtful engagement with the data . . . and the analytic process" (Braun and Clarke, 2019, p. 594). Thus, the researcher needed to go forth and back through the transcripts several times.

To conduct the data analysis, I referred to Braun and Clark's research (2006, 2013, 2020) where they outlined six phases for conducting a thematic analysis. These phases are fully described in this section and are summarised in Figure number 4.3.

Figure 4.3

Six Phases of Thematic Analysis (Braun & Clarke, 2020)



In the first phase, I read through all the transcripts several times to become familiar with the content. This involved reading and re-reading through transcripts of interviews. I also took notes on anything that stood out to me or seemed important and interesting in addressing the research questions. For the second phase, I began generating initial codes. This involved identifying and labelling as codes, key words or phrases that captured important and interesting aspects of the data and that are relevant or meaningful in regard to the research questions. As Braun and Clarke (2021) suggests coding involves more than just summarising the content of the dataset; it also involves expressing an analytical perspective on the data. Codes provide the building blocks of analysis (Braun and Clarke 2013). Coding was done using both deductive and inductive approaches where I chose to manually code the data on printed paper transcripts because I found it to be the most practical option for me. I began by going through each interview individually and creating basic semantic codes that captured the explicit meaning of the participant's statements. Additionally, I made some notes in the margins to point to what was being revealed in the interviews such as speculations, commonalities between interviews, or things to focus more on. Coding became more focused in relation to my research questions and had less codes as progressing in the analysis process. I then jotted down potential themes and

deeper level thoughts that made sense in relation to the research questions and moved to a more interpretive level of analysis.

In the third phase, I started developing the themes by looking for patterns in the codes. This involved grouping similar codes together and identifying overarching themes that emerged from these groupings and which might provide a meaningful answer to the research questions. Themes capture 'something important about the data in relation to the research question' (Braun and Clarke 2013, p.82). Unlike the codes, these constructed themes describe broader and shared meanings. After identifying initial themes that might address the research questions, I organised all coded data relevant to each proposed theme and had the codes as evidencing data. These themes were created by me, considering my understanding of overarching patterns and meanings found within the codes. I developed three preliminary overarching themes: (1) A conceptualisation of critical thinking, (2) The development of students' critical thinking, and (3) Barriers to the development of students' critical thinking.

During the fourth phase, I checked the accuracy of the initial themes by reviewing the data and ensuring that each theme was supported by evidence and multiple examples. I also made sure that the themes made sense in relation to both the coded extracts and the entire dataset. The main themes in my research are derived from the interview questions that were designed to address the research main questions. According to Braun and Clarke (2006), "a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (p. 82). Thus, the themes needed to be compelling to highlight important patterns related to the research questions. I was trying to make sure analysis goes beyond a descriptive level and that the themes told a coherent story that reflected the data set and gave answers to my research questions. This phase involved reviewing data within themes to ensure that data extracts fit together and formed a pattern in addition to evaluating the clearness and meaningfulness of the themes reflecting the data set.

In the fifth phase, I named and defined each theme by writing a brief description that captured its essence and ensured it was clearly demarcated with a strong core concept. This phase involved a detailed analysis for each theme through identifying a story that the theme captured and how this fit with the overall story of the data set aiming at building depth and detail through the analytic narrative (Braun et al., 2016).

Finally, in the sixth phase, I produced a report summarising my findings and including descriptions of each theme and quotes from the data to support them. Persuasive data extracts were selected to compliment the analytic commentary, and to capture the essence of the argument (Braun and Clarke 2006). The goal of this report was to construct a coherent and convincing story about the dataset that addressed the research questions by weaving together an analytic narrative with compelling evidence from data extracts (Braun & Clarke, 2021). I then run through the reported analysis once more and sent back to my supervisors form more feedback. Overall, following Braun and Clarke's six phases allowed me to conduct a rigorous thematic analysis of my data and produce meaningful insights into my research questions and objectives.

4.6 Trustworthiness

For qualitative research to be valid and reliable, trustworthiness is a compelling goal that should be attained, indeed Lincoln and Guba (1985) described four general criteria in their approach to trustworthiness, namely: credibility, transferability, dependability, and confirmability. These four criteria have informed my approach to explore teachers' understanding of critical thinking , its development and the impediments challenging the situation in the Algerian higher education context.

First, for **the credibility** of research to be established, Stahl & King (2020) indicated that "one is seeking to understand how the reported findings" hang together" in that the ideas should share some relationship with each other" (p.26). This means that the data and the interpretations of the researcher should be consistent. Credibility could be improved through 'member checking', where the researcher involves informants in verifying the researcher's interpretations after the fact (Stahl & King, 2020). This will lead to trust being engendered in the researchers and their conclusions. In the present study, and after conducting the interviews, the researcher requested that the participants review and confirm the accuracy of the data collected. This allowed for any potential mistakes, misunderstandings, or inconsistencies to be corrected with the assistance of the respondents.

Second, Lincoln and Guba (1985) proposed the concept of **transferability** in qualitative research which suggests that findings and descriptions from one context may be applicable to another, even though replicability is not the goal of qualitative research design. To ensure transferability in the current research, the researcher provided what Stahl and King (2020) term a 'thick' description of the method used, the processes of data collection and analysis and their time frames besides completely describing the contextual data in detail. The detailed

and comprehensive description provides a sufficient representation of the situation for possible application to other contexts. Adhler (2022) further added that: "regardless of the approach of the researcher, the key to trustworthiness of a qualitative study is transparency, and by transparency, I mean that not only should the research techniques be precisely spelled out, but also that the epistemological and theoretical bases of the work must be made explicitly apparent" (p.600). Thus, the methods, the processes of data collection and analysis and most importantly the epistemological and ontological background of the research should all be well documented and disclosed to the reader.

For **dependability** which is the third perspective introduced by Lincoln and Guba (1985), both the researcher and the reader need to build their trust in events as they unfold. I ensured the criteria of dependability by maintaining a record of the research processes, including formulating research questions, designing the interview guide, conducting the pilot study, conducting interviews, transcribing and coding data. This audit trail also helped meet the criteria of **confirmability,** which is the fourth perspective on trustworthiness described by Lincoln and Guba (1985), by ensuring that the interpretation of findings is derived clearly from the data. The documentation of the research process, including data collection, analysis, and interpretation is denoted as an audit trail in qualitative research. It is a record of all the steps taken during the research process, including decisions made and changes implemented. The audit trail here served as a means of ensuring that the research is transparent and can be replicated by others. It also helps to establish the credibility and trustworthiness of the research findings. It may include raw data, field notes, transcripts of interviews or focus groups, coding schemes, memos, and other relevant documents where every step or decision should be spelled out for the readers of the research (Rose & Johnson, 2020). For the current study, the researcher included the interview guide first and the revised versions and also exemplary transcripts in both English and Arabic languages.

4.7 Themes generated

From the data collected through the interviews, three main themes were generated capturing respondents' perceptions and understanding of critical thinking, the extent to which it is practiced in classrooms, and by which means this was achieved, as well as depicting teachers' views of the hindrances they believe impede the development of students' critical thinking.

- Theme 1: A conceptualisation of critical thinking.
- Theme 2: The development of students' critical thinking.

- Theme 3: Barriers to the development of students' critical thinking.

The themes identified will be presented and analysed in chapter 5. Then, they will be discussed in the light of the foregoing reviewed literature in chapter 6.

4.8 Summary of the Methodology Chapter

This chapter presented the methodological approach of the current study. Primarily, I have identified the research questions that this study proposes and then I introduced the qualitative approach and justified the rationale for choosing this approach particularly in this study by highlighting its ability to effectively address the research questions. Then, I outlined the research design adopted, and the qualitative method used was also emphasised to demonstrate the rigour of the study. After that, I presented the process of developing the interview guide for the semi-structured interviews as the main instrument in this study, followed by an explanation of the pilot study prior to the data collection process and lastly, I presented an overview of how the data would be analysed.

Chapter Five: Data Presentation and Analysis

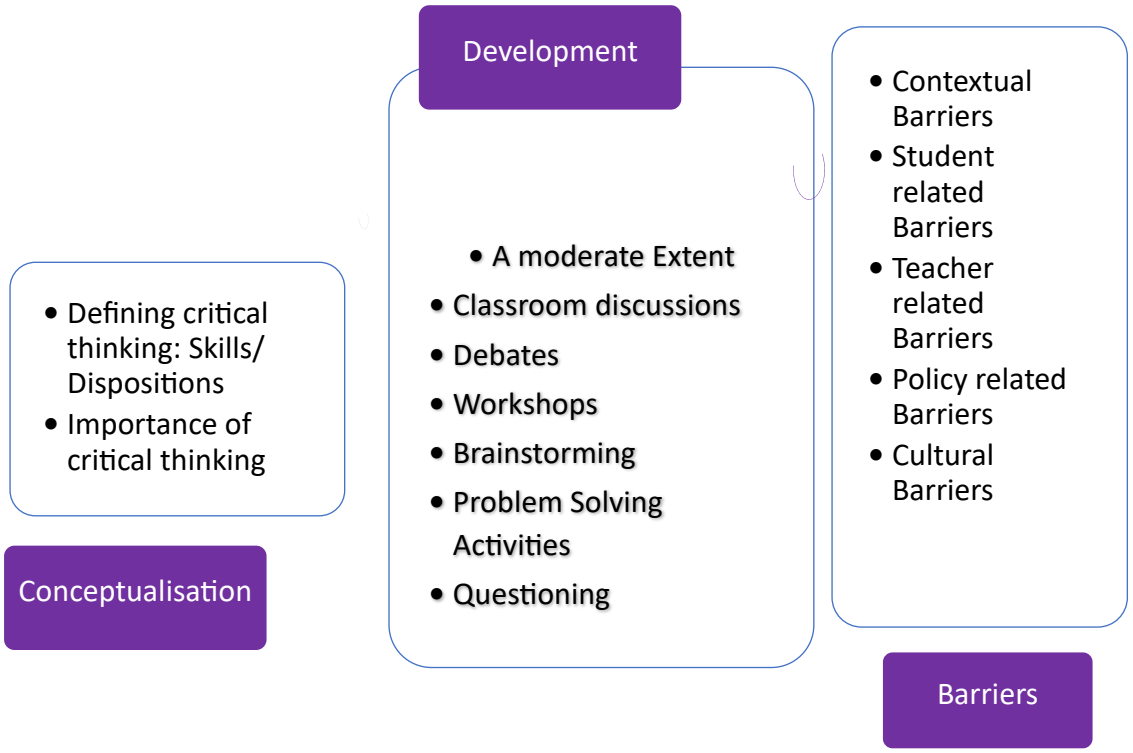
5.1 Introduction

To address the two research questions, 16 semi-structured interviews were conducted to explore teachers' conceptualisation of critical thinking (RQ1), the extent to which these teachers believe they support their students' development of critical thinking and how this is practised (RQ2). From the analysis of the interviews, three key themes were identified, and they will be presented and analysed in this chapter. It is important to indicate that these themes are further divided into sub-themes and categories.

Consequently, this chapter will be divided into the three respective themes which will be supported by quotes from the respondents' answers. The themes identified are namely, teachers' conceptualisation of critical thinking, the development of students' critical thinking and the barriers to the development of students' critical thinking. The former presents and analyses the data related to teachers' critical thinking conceptualisation and its importance. The second unveils teachers' methodologies that help in cultivating students' critical thinking. The third sheds the light on the barriers that impede teachers in their quest to implement critical thinking. A thematic map is presented in Figure 5.1 to give a brief summary of the three themes generated from the interviews' data. The chapter ends with a conclusion which sets the scene to the next chapter.

Figure 5.1

Current Study Thematic Map



5.2 Theme One: A Conceptualisation of critical thinking

Theme one depicts teachers' perspectives and insights regarding their understanding of critical thinking and how important it is to develop students' critical thinking. This is one of the three major themes in the present study as it answers the first research question. It will be reported here in an analytical way but will be discussed thoroughly with the exploration of theoretical and scholarly interconnections later on in the discussion chapter. The theme involves teachers' definitions of critical thinking and what it entails in addition to capturing its importance at various levels. The theme is also divided into two sub-themes where the first sub-theme explains teachers' conceptualisation of critical thinking and the second captivates the significant roles that critical thinking plays from these teachers' perspectives.

5.2.1 Teachers' conceptualisation of critical thinking

The teachers were asked about their definition and understanding of critical thinking as the research aimed at gaining clearer insights into Algerian university teachers ' conceptualisation of critical thinking and how they perceive and define it. The analysis of the

findings revealed that these teachers have almost a similar understanding of the nature of critical thinking as the words ‘questioning, argue, inquiry, evaluation, analysis, reflection, logic and reasoning ’have been found in most of the teachers’ answers repeatedly. These words reflect the commonality in the teachers’ views of critical thinking where the skills involved are much more emphasised than any other aspects of critical thinking.

Nevertheless, whilst all the definitions provided by the participants showed some overlaps there were also some differences in the emphasis placed on different aspects of critical thinking. The difference indicated in the definitions is related to giving a more emphasis to the dispositional aspects of critical thinking where the teachers stated clearly that critical thinking involves more than possessing certain skills such as evaluation and analysis. It also requires a particular mindset or disposition. Without these dispositions, critical thinking cannot be effectively operated. On this basis, the teachers’ views are then divided into two categories namely critical thinking as a process and critical thinking as a process plus dispositions. These categories are also summarised in Figure 5.2.

5.2.1.1 Critical thinking as a process:

The majority of the interviewees evoked the idea that critical thinking is a process that entails a set of skills such as analysis, argumentation, evaluation and reflection. These teachers in their conceptualisation of critical thinking focused more on the procedure itself and the skills involved within that process of thinking.

One of the teachers in this category perceived critical thinking as an investigation of the validity of the information given based on evidence and the principles of logic and reasoning. “What I believe is that critical thinking means looking at things from different angles and weighing their supporting arguments” (Mustafa). This response denotes that critical thinking in this teacher ’s belief entails the analytical and evaluative nature of critical thinking. The teacher understands critical thinking as a process that involves an analysis, an evaluation and a critique of all sorts of information to reach conclusions which are justifiable and logical. Similarly, Selma stated clearly in her response that: “critical thinking is a cognitive process that entails the skills of analysis, questioning and evaluation. It is about thinking reasonably and logically about everything as one should not take things for granted and inquire about all aspects based of course on the principles of logic”. For that reason, critical thinking appears to involve a set of skills that help to reach reliable knowledge and a logical judgement through skills of questioning, analysis and evaluation.

Another skills' based explanation of critical thinking was provided by Jalal who pointed out to the idea that critical thinking involves aspects of scepticism and inquisitiveness as well. He believes that: "critical thinking is a cognitive purposeful process of using logic to give evidence for the sake of searching for solutions and making inferences by asking questions of how, what, and why to reach the cause, the consequence and find results or solutions". Critical thinking, in his opinion, allows to inquire and shed the light on points that escape the person to finally arrive to the truth or get answers based on examined evidence. This definition reflects the sceptic, inquisitive and evaluative nature of critical thinking and how necessary it is not to accept things unquestionably and have the courage to doubt and judge things based on logic. This belief is similar to Lipman's thoughts which describe critical thinking as a "skilful, responsible thinking that facilitates good judgment" (Lipman, 1988, p.39).

Abdullah and Hanan emphasised the idea that critical thinking is a higher order thinking process, and they added synthesis, interpretation and reflection to the set of skills that critical thinking involves. In this regard, Abdullah indicated that critical thinking is considered as a higher order thinking that depends on skills of analysis, synthesis, evaluation, reflection and interpretation. Similarly, Hanan understands critical thinking as being: "a process determined by reflection, evaluation and questioning. It is when you do not accept things anyway; you do not take them for granted". Hanan also added that: "when you read a story for example, read between the lines and most importantly ask questions as it is not written for the sake of writing, there must be something behind the curtain for you to reflect upon". Critical thinking for this teacher then involves analysing and evaluating information, arguments, and evidence through reflection, questioning, and reasoning. It allows individuals to make informed decisions and judgments based on evidence rather than accepting things blindly or based on personal biases. This teacher's understanding of critical thinking is the approximate understanding of critical thinking as of Ennis who explained that critical thinking is "a reflective and reasonable thinking that is focused on deciding what to believe or do" (2011, p.1).

These definitions signify that these teachers understand critical thinking as having more of an inquisitive, reflective and judgement nature which is a thought advised by Diane Halpern who as well insisted on the idea that critical thinking is a multi- faceted concept that is based on standard features that include comparison, contrasting and the evaluation of different subjects and viewpoints (2014). All of these definitions fall under the skills- based view of critical thinking which are presented in the Delphi report (1990) and comprehend critical thinking as skills of reflection, argumentation and the formation of sound judgment.

5.2.1.2 Critical thinking as skills plus dispositions

Interviewees in this conceptualisation category believe that critical thinking is more than an evaluation or an analysis or a set of these skills and others; it is more about the process plus the dispositions. The interviewees indicated that a critical thinker should have the disposition to do so, otherwise the critical thinking process would not be exercised. One of the teachers' responses evoked a detailed explanation of the nature of critical thinking in relation to critical thinking dispositions. She (Razika) claimed that: "critical thinking is the analysis of information in trying to understand them; it is built on reflection, evaluation and the examination of evidence to infer meaning, so it advises scrutiny and makes a person flexible in terms of judging and accepting new ideas in addition to keeping the person seeking out truths or trying to find solutions". Her response signified that critical thinking is a process of evaluating information in order to make well- informed decisions, solve problems and reach conclusions. Also, critical thinking requires a person to be open- minded, flexible and willing to consider alternative perspectives.

Likewise, Jamila declared that : "critical thinking is a particularly important skill since it is pertinent to real life tasks. It is a process of searching for arguments supported with principles of logic and incorporating inquisitiveness and evaluation of all forms of knowledge. It involves many skills such as analysis, synthesis, comparison and evaluation. A critical thinker must also be tolerant, flexible and open to others 'views and justifiable evidence". This comment on critical thinking focused as well on the importance of dispositions as of open mindedness, flexibility, inquisitiveness and tolerance.

These teachers perceive critical thinking as a process of evaluation and judgment of arguments based on logic that necessitates a willingness to do so and a person who is interested in others' viewpoints, flexible, tolerant and more importantly open- minded. From these teachers' perspective, critical thinking is a process that entails a set of skills plus dispositions; skills such as analysis, evaluation, reasoning and added dispositions such as open mindedness, willingness, inquisitiveness, tolerance and flexibility in terms of accepting others' views. Critical thinking then is seen as "a combination of the propensity and skills to engage in activity and 'mental activity 'with reflective scepticism focused on deciding what to believe or do" (Fasko, 2003, p.8). Thus, it could be argued that some Algerian university teachers acknowledge the skills plus the dispositional dimension of critical thinking. This dimension is cited in the works of Robert Ennis as of critical thinking dispositions (dates)

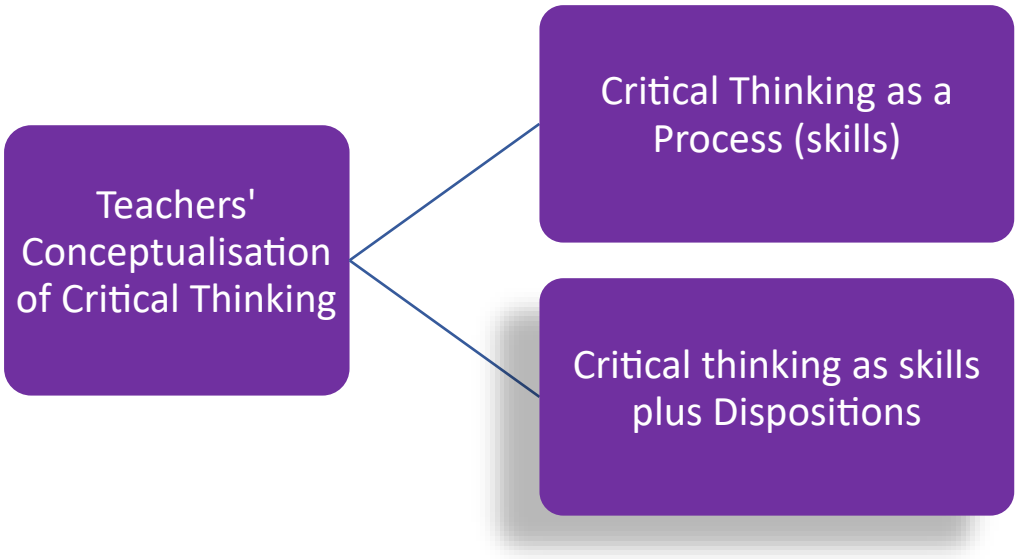
that characterise a critical thinker and necessitates the existence of such dispositions to exercise the process of critical thinking.

5.2.1.3 Summary

All these answers show that teachers interviewed in this study had some overlaps in their understanding of critical thinking as they consider it a process that involves not only aspects of reasoning and logic, but as a process that implies inquisitive facets as well. However, there are four teachers who emphasised the necessity of the critical thinking dispositions, and they pointed out that a critical thinker is characterised by a set of dispositions such us open-mindedness, flexibility, willingness and tolerance and without these dispositions critical thinking cannot be exercised or developed. It is worth mentioning as well that there is a similarity in teachers' conceptualisation of critical thinking within the context of their teaching which means that teachers' understanding of critical thinking eliminates disciplinary differences in the present study. The researcher initially looked for disciplinary differences but the universality and overlap in definitions here did not surface any specific disciplinary differences amongst these teachers. Overall, critical thinking means to arrive at a reliable and valid knowledge after a process of doubt and evaluation of information as there should be, but big questions asked, different angles to look at and a thinking out of the box with a critical eye and a critical spirit 'a disposition to do so 'without which critical thinking cannot be practised (Ennis, 2016).

Figure 5.2

A Summary of Teachers' Conceptualisation of Critical Thinking



5.2.2 Teachers' beliefs about the importance of critical thinking

The teachers were asked about the importance of their students' developing their critical thinking skills. The responses appeared similar, and all the participants recognised the importance of critical thinking and the distinguished role that it plays, but when asked about the reason behind this value of critical thinking, the answers were a bit diverse as teachers gave different explanations to why critical thinking is of a high importance. These answers are categorised into four categories that will be presented in this section and are summarised in Figure 5.3.

5.2.2.1 Students' self-development

Seven participants agreed on the importance of critical thinking for their student' self-development. These participating teachers argued that critical thinking helps in improving personal skills such as communication, argumentation, creativity and self-reflection and in turn supports students building their personality and character. "Critical thinking skills are well needed in building one's personality" (Amina). Razika as well highlighted the idea that: "critical thinking helps students understand many phenomena and infer meaning from them; it develops their communication skills and gives them an analytical mind and a critical character ". This idea evoked that critical thinking helps to better understand and interpret

things and thus improve personal, analytical and communication skills which helps in turn to deal with the encountered life situations and phenomena. These teachers believe that critical thinking is highly valued for students' personality development and in everyday situation; therefore, it is pertinent to real life tasks and activities. Similarly, Mahmoud declared that: "critical thinking makes students more active and productive thinkers and develops the self and helps improve different personal and social skills". These teachers indicated that since critical thinking triggers inquisitiveness and evaluative facets, this helps to improve personal and social skills which in turn supports the development of one's personality. The teachers believe that critical thinking helps students develop their personality and skills at once.

5.2.2.2 Enhancing students' academic performance

Three other teachers claimed that critical thinking plays a significant role in enhancing students' academic performance and transforming them to be better learners and to improved grades. "Critical thinking helps students to be active thinkers rather than being passive learners who tend to take things for granted and ask no questions or have a less responsibility in their learning" (Riad). Critical thinking then makes students more focused and attentive in the classroom in addition to creating a dynamic atmosphere where students engage more and involve themselves in productive activities.

Dalia has also pointed out that: "critical thinking helps students perform well as it improves the questioning, analysis, synthesis, argumentation and evaluation skills. These skills allow students to think in a more critical way about their learning and enable them to become life-long independent learners whose performance is accelerated". This teacher's perspective identifies critical thinking as a valuable tool to students for it enhances their inquisitive, analytical and evaluative skills. In addition, it encourages students to be more reflective and independent in their learning, allowing them to perform more efficiently.

Likewise, Mouhammed revealed that: "critical thinking is an essential skill that should be developed in classrooms as it serves the development of students' academic performance by making students more focused, more productive, engaged and creative". Consequently, these teachers consider critical thinking as having a profound impact on enhancing students' academic performance and should be seen thereafter as an educational aim that must be fulfilled in the classroom.

5.2.2.3 Challenging Fallacies and Finding Truth

Three other teachers believe that critical thinking is important in challenging misconceptions and finding the truth. Critical thinking helps to understand what is conveyed clearly to prevent any misunderstandings based on reasoned judgement. It was clearly stated that: "critical thinking helps students to analyse and criticise things in a logical way and thus prevent any misunderstanding" (Abdullah). Another teacher revealed that: "it is particularly important for university students to develop critical thinking skills as the latter triggers their mind to question every information they receive and helps to develop their ability to analyse and understand complex issues then reintegrate them in a form of a valid knowledge eliminating all kinds of fallacies" (Soumia). From these teachers' viewpoints, critical thinking leads to some kind of scepticism which in turn leads to an analysis and weighing of information to form valid conclusions free of misconceptions. In the same line of thought, Kamal maintained that critical thinking is important in challenging fallacies and prejudice. He said: "every person is called upon to develop a critical approach to confront biases and overcome different falsifications". This perspective indicates that critical thinking development is a requirement for confronting misconceptions to arrive at reliable and valid knowledge. These teachers clearly argue about the significance of critical thinking in the process of challenging fallacies and finding the truth.

5.2.2.4 Solving Problems and making decisions

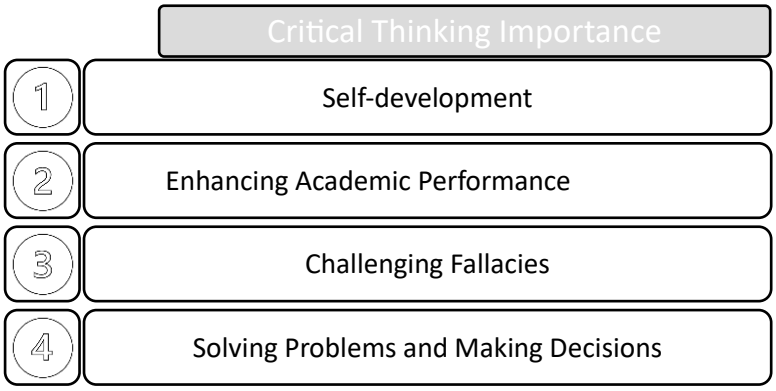
Other three teachers believed that critical thinking importance lies within its capability to solve problems and take decisions. Critical thinking in their belief helps not only in solving problems but in creating ways and alternative choices in the process of thinking critically; "critical thinking helps in solving problems and finding solutions to the different issues that one may encounter during the learning process or even at work"(Souad). Mustafa also supported this idea and stated that: "those who practice critical thinking can always adopt and adapt to any situation and make better choices whether in their personal or professional lives". With critical thinking then, these teachers believe that one can make better decisions and solve problems more effectively as it helps to develop creative solutions to complex issues and allows to look at situations from different perspectives and identify potential solutions. By developing students' critical thinking skills, they will be better equipped to manage any situation that comes in their way either in the classroom or in their daily lives. Likewise, Selma highlighted that: "critical thinking is very important as it helps in forming individuals capable of confronting different problems and ready to think critically and solve them or take

decisions about them". Consequently, critical thinking from these teachers 'views is important in its being a useful tool to problem solving and decision making and for encouraging students 'independent thinking and creativity.

In summary, it can be seen from the presentation of the data in this section that all the teachers 'viewpoints reflect the high importance of critical thinking whether for the personal or the professional practice. Teachers do acknowledge the significant role that critical thinking plays in the development of personality and in improving other social and educational skills such as communication, argumentation and analysis. Confronting biases and challenging falsification is also needed in getting reliable and valid knowledge in order to solve problems and make decisions. This reflects the teachers 'awareness of the importance of critical thinking and suggests it is a requirement in the educational system. Therefore, policy makers should pay attention to its position and put some effort to invest in the formation of graduate critical thinkers.

Figure 5.3

A Summary of the Importance of Critical Thinking



5.3 Theme Two: The Development of students' critical thinking

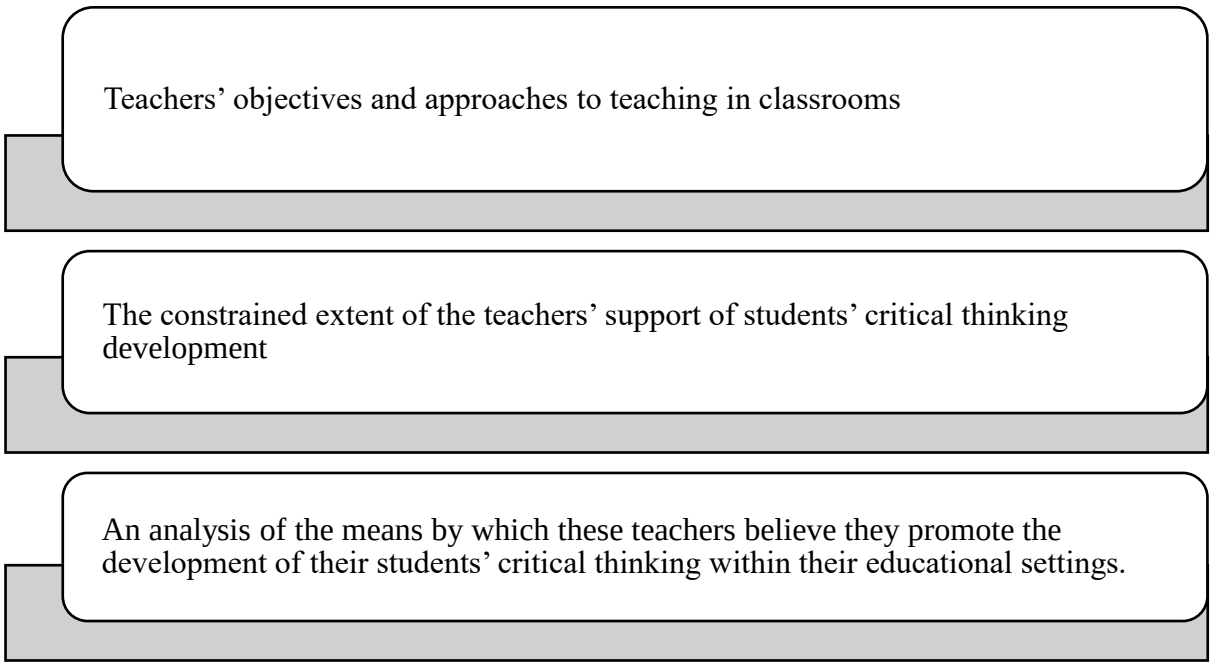
The previous theme presented and analysed teachers' understanding and conceptualisation of critical thinking and the significant role that it plays. Theme two however encapsulates the extent to which these teachers believe they support the development of their students' critical thinking, and by which means they do that in classroom settings. Theme two which will be reported here is important for it helps in answering the second research question

regarding the extent to and how these teachers believe they support students' critical thinking development at the university level and discloses the teachers' approaches and objectives of their teaching practices. It also illustrates some methodologies that these teachers integrated within the lesson plan. These methodologies range from classroom discussions, debates, workshops, brainstorming, problem- solving activities, asking questions and lastly self-assessment. This section is broadly organised into three sub-themes summarised in Figure number 5.4. The first sub-theme presents teachers' objectives and approaches to teaching in classrooms, the second sub-theme highlights the constrained extent of the teachers' support of students' critical thinking development and the third sub-theme depicts an analysis of the means by which these teachers believe they promote the development of their students ' critical thinking within their educational settings.

- Teachers' objectives and approaches to teaching in classrooms
- The constrained extent of the teachers' support of students' critical thinking development
- An analysis of the means by which these teachers believe they promote the development of their students' critical thinking within their educational settings.

Figure 5.4

Critical thinking Development Sub-Themes



5.3.1 Teachers' objectives and approaches to teaching in classrooms

5.3.1.1 Teachers' main objective of teaching

To have a clearer idea about teachers' practices and the role that they are playing in the classrooms and to gain insights into teachers' perceptions towards their teaching process and students' critical thinking development, the researcher asked these teachers first to identify the main objective of their teaching. The analysis of the findings in this regard concluded that the objectives of teachers varied where three main categories namely transmission of knowledge, teaching learning skills and teaching discipline- related skills were produced. This variation goes back to what the discipline itself necessitates. But still, the dominant objective reflected by these teachers is the transmission of knowledge. These will be explained as follows:

- Transmission of Knowledge: The results obtained from the analysis of the interviews showed that 08 out of 16 interviewed teachers' objective of their teaching is primarily the transmission of knowledge where the teacher plays the greater role in the classroom. The teacher will be noticed always in the front of the classroom acting as a controller and an instructor who explains things and imparts knowledge and information. Mouhammed argued that: "the main objective of my teaching is to communicate information in a comprehensible way". This indicates that his main objective is to simplify and share knowledge and information with students in the best possible manner. On her part Souad stated that it is her job to transmitting knowledge to her students by acting as a guidance. She added that "the aim should be about building knowledge and imparting a comprehensible input". Another interviewee (Mustafa) revealed that his objective is to transmit knowledge to his students; he said: "I am the expert who has to supply students with a designated body of knowledge; students need to listen carefully and then retransmit that particular type of knowledge for evaluation purposes". He was also illustrating that "these students come to university with a very limited background on sociology and we have to teach them what it means, its principles, its history and development till today". These teachers' views reflect that their objectives are limited towards providing guidance and transmitting knowledge to their students.
- Teaching learning skills: When they were asked about their objective in the classroom, three teachers referred to their aim being to teach students learning skills. They emphasised the idea that their foremost purpose is to develop students' skills and awareness of how they learn so that they can learn on their own even outside educational

settings. This view indicates that the teacher's role in the classroom is to assist students to acquire, practice and apply the skills needed for real life situations. Similarly, Amina declared that: "in addition to delivering information around the subject matter of the lesson, my objective is to teach students some analytical skills that will benefit them in their learning process and in their lives in general", and as she was asked to elaborate and give examples of these skills, she said: "amongst these skills, I shed light on analysis, critical thinking, comparison, argumentation, solving problems and communication. I always use questioning to trigger students' thinking and create spaces of dialogue and discussion of topics related to daily life situations". The teacher suggested that her objective as a teacher is to supply students with the essential tools and strategies to become productive, effective and independent learners. This involves teaching students how to learn, rather than just what to learn and helping them to develop a variety of skills such as critical thinking, problem-solving, argumentation and communication. These skills she believes are essential for academic success and in life in general.

Hanan is another interviewee who emphasised that: "one of the main objectives of my teaching is what you came to discuss today which is critical thinking; I usually tend to discuss complex topics with my students. I do aim at preparing my students to go to real life and to the world of profession trained and loaded with skills that help them deal with any situation". The objective of the teacher is not only to impart knowledge to students but also to empower students with learning skills which encourage them to take responsibility for their own learning process and become active participants in their education and life beyond. The aim of these teachers targets empowering students and developing learning skills such as critical thinking, communication and argumentation without taking anything for granted and accepting convincing evidence.

- Teaching Discipline- Related Skills**:** Few teachers advocated that teaching discipline - related skills is their primary goal in the classroom. Two of these interviewees particularly from the EFL discipline explained in their answers that their objective is to teach discipline- related skills only. The latter entails teaching students knowledge of the discipline itself and the skills associated with that discipline; this means to become deeply familiar with a knowledge-based discipline, know how to use it, articulate a problem and solve it and finally communicate the findings and draw out conclusions within that specific discipline. One of these teachers declared: "my objective entails enabling students to develop their English language basic skills ranging from reading and listening to speaking and writing; students need to understand the grammar and the rules of that

language and communicate in the best appropriate manner" (Dalia). Likewise, Jamila stated that: "my objective actually depends on the subject matter taught; generally, it is about achievement of the aims of the course and mastery of the target language". These teachers aimed at improving students' academic performance; they are focusing on teaching their students the basic skills needed for that discipline.

In summary, this particular question of the study interview sought to gather insights of teachers about their objective of teaching and aimed at identifying the extent to which students are encouraged in the classroom to be creative of their learning experiences, analytic and active. As indicated the presentation of the data above, teachers' views of their objectives of teaching could be located within two paradigms: the constructivist and the transmission paradigm, but half of these teachers are adopting the traditional method of teaching by working on transmitting knowledge solely and neglecting the importance of interaction and exploration in the building of meaning and making sense of the social reality. Moreover, few of the teachers in this study seemed aware of the importance of giving their students quality learning experiences as most of them do not engage their students in their learning process and tend to just offer a body of knowledge.

5.3.1.2 The role of the teacher in the classroom

The findings from most of the interviews revealed that in most of the classrooms there emerged two categories where the learning- teaching process is either teacher- centred or it is learner- centred. This means that the role the teacher plays in the classroom differs and is in some way dependent on the objective of the teacher as well which denotes that the teachers ' objectives go hand in hand with the roles they are playing in classroom. The two approaches are explained as follows:

The teacher- centred approach: This approach focuses on the teacher as the main source of information in which he/she plays the role of an instructor, monitor, explainer, evaluator and controller of the classroom. Here the teacher is the dominant part on most occasions. In this study, ten out of sixteen interviewed teachers indicated that they have a tendency towards the traditional approach where they dominate the classroom and talk excessively whereas students listen carefully and remain silent focusing on their educator. Hanan one of the interviewed teachers who argued that: "my role is central; well, I believe it is pivotal. I do not want to disappoint you, but I am everything in the classroom; students are passive, and they do not help as much". Another teacher added: "usually I am the explainer

of the lesson, the tutor and the source of information; when students are in the classroom, they listen to receive knowledge I share with them and remain quiet and in order" (Dalia).

Riad addressed his role as being an information provider and a planner of lessons who works on drawing a roadmap for the whole semester and trying to achieve his teaching goals. He acknowledged that he controls the whole classroom and the teaching process: " I have the full control of the classroom and activities; it all happens under my supervision starting from designing the lessons during the course to the assessment of activities and exams. In that way, I do not worry if my students miss any important information". Similarly, Mustafa indicated that: "I am in charge of my students' learning; I have the ultimate authority in the classroom; I usually tend to give my lecture and students listen and take notes. Students are passive, but I make sure that they comprehend the information I provide". Accordingly, teachers using this kind of approach in their teaching process appear to have their ultimate control in the classroom; their goal is to provide information and their students are passive most of the time. These teachers' views denote that their students are discouraged from asking questions, logical engagement and communication.

Learner- centred approach: Only six out of the sixteen interviewed teachers considered their role to be equal to their students in the classroom; they believe that the focus should be on the learners themselves and how they construct knowledge. In this approach the learner is put in the centre of the learning process. The role that the teacher plays is particularly directed towards creating conditions in which students learn for themselves. Jamila one of the teachers interviewed described her situation as: "students do most of the talking, choose, present different topics and discuss them; they even evaluate their learning; my role involves guidance and orientation only". The teacher believes that students learn better when they are actively engaged in their learning and where they have control over their own learning; students are given more opportunities to participate and take control in the classroom. On her part, Soumia explained that: "I motivate my learners and give them the freedom to choose the topics we discuss in classroom; I want them to be autonomous and creative that is why my role is restricted to assess their works, direct them and manage the classroom". This teaching approach as reflected in the teachers' views makes students' needs and learning experiences the priority in the educational process.

Another teacher (Kamal). as well commented, that: "I work on encouraging my students to look at others' viewpoints and discuss them, be independent, responsible and

autonomous. I allow them to work in groups and pairs to assess and evaluate their learning, to express their ideas and drive the lesson by working constantly and use their transferable and higher- order thinking skills especially for the problem- solving activities". Kamal is arguing that he is just a facilitator in classroom as students are responsible for their learning. They collaborate, communicate and open the discussion of several topics to make meaning and construct knowledge.

Other teachers indicated in their responses: orientation, guidance, and facilitation and they emphasised the importance of interaction and communication among students themselves. Consequently, it is notable that these teachers whose approach entails learner centredness encourage their students to communicate, interact, argue and most importantly ask questions to learn and acquire knowledge. What is important here to these teachers is to develop students analytical and communicative skills such as collaboration, inquiry and argumentation.

5.3.2 The constrained extent of the teachers' support of students' critical thinking development

The teachers agreed that critical thinking is an important skill for students to develop and that it should be encouraged in the classroom. However, they also noted that it can be difficult to implement or develop due to some hindrances and interfering factors that will be referred to in the next section (see section 5.4). In their responses, the interviewees repeated words such as: to some extent only, sometimes, from time to time, not very much indeed, occasionally, and seldom. On his part, Jalal commented that "while we teachers play a crucial role in fostering critical thinking skills among students, we can only support it to a limited extent. There are so many constraints that prevent creating opportunities to explore different perspectives and to have the flexibility to delve deeper into a topic with the students".

Additionally, another teacher has claimed that: "while teachers can provide guidance and resources to help students develop critical thinking skills, it is ultimately up to the students themselves to take ownership of their learning and apply critical thinking in all aspects of their lives. Yet, they are obstinate and indifferent to develop their skills and thus make it hard for their teachers to help them on a frequent basis" (Dalia). Another teacher also clarified that: "what I believe is that critical thinking should be a major education goal, yet in reality this could not be frequently achieved as many impediments interfere in the process" (Selma). This indicates clearly that teachers are able to a limited extent only to support their students'

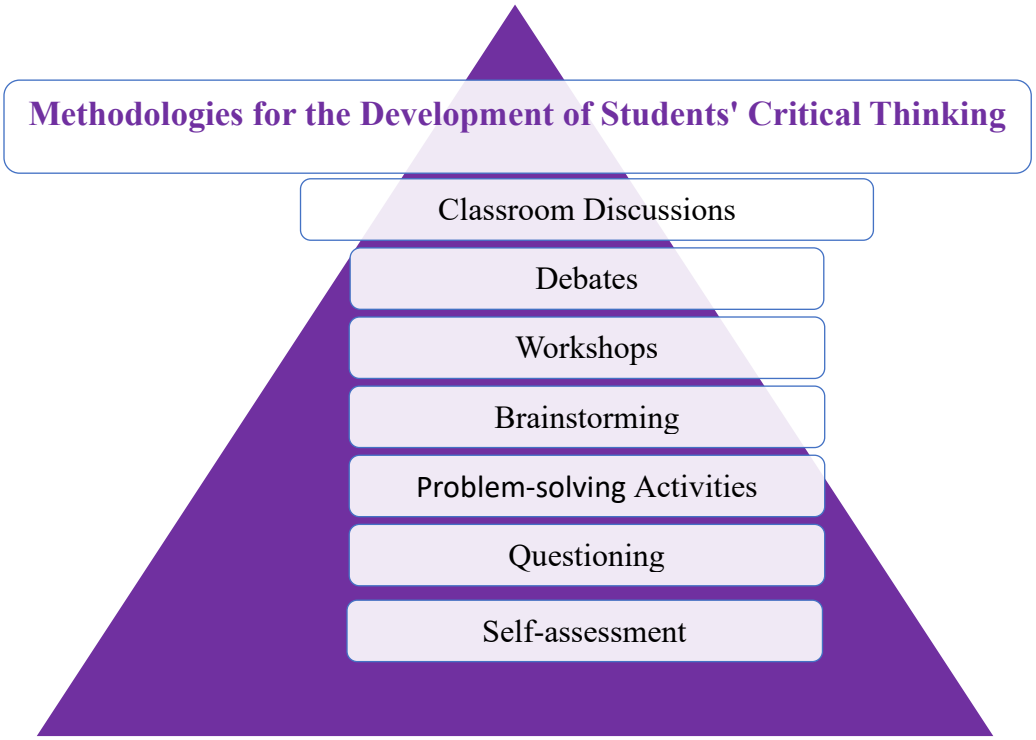
critical thinking development although they are aware of its high importance. Consequently, critical thinking is seldom practiced, and thus it is still not an educational priority in reality as indicated the views of the teachers in the current study context.

5.3.3 The means by which these teachers believe they promote the development of their students' critical thinking

Additionally, when asked about the means by which the teachers help their students to improve their critical thinking, the emerging data uncovered different methodologies that the teachers used to support and promote students' critical thinking in the classroom. These are then classified into seven categories in which a respondent may belong to one or more category(see Table 5.1) and are summarised in Figure 5.5. The respondents stated classroom discussions, debates, workshops, brainstorming, problem solving activities, asking questions throughout the lesson and lastly self- assessment. These will be thoroughly analysed in this section.

Figure 5.5

Methodologies Implemented for the Development of Students' Critical Thinking



5.3.3.1 Classroom Discussions

The majority of teachers referred to classroom or group discussions as their preferred methodology used in the support of the development of students' critical thinking in classrooms. Most of the teachers who preferred classroom discussions and were leading a student- centred classrooms and had a skill plus dispositional view of critical thinking and thus they made use of these classroom discussions as a type of activity or a practice where they share ideas and viewpoints about different topics with their students aiming at developing the procedural and dispositional facets of students' critical thinking. Among the representative answers in their preference to classroom discussions as a supporting methodology for critical thinking what Kamal has evoked: "I usually aim to open a door for classroom discussions, they are extremely helpful in making students focused, inquisitive, analytical and more engaged. We discuss different topics and try to see things from different angles and different perspectives. This helps a lot in learning to accept or refuse others 'views based on logic and convincing arguments which in turn lead to developing students' critical thinking and I myself learn from that". The teacher tries on every possible occasion to implement classroom discussions to help students develop their communication, argumentation and analytical skills and to teach them how to be flexible, open-minded and respectful of others' perspectives. This means that the teacher is aware of the importance of developing students' critical thinking skills and dispositions as well and uses classroom discussions as a supporting methodology for that reason.

Similarly, Jamila pointed out to the idea that classroom discussions help not only in developing students' critical thinking, but also their creativity and engagement in the classroom, she said: "as critical thinking of students must be strengthened; I tend to make them interact and discuss specific topics where they exchange ideas and expand their horizons. This in turn will increase their enjoyment in classroom and make them more engaged and more productive and mostly creative". This means that the teachers believe that classroom discussions are a great activity for students to understand complex issues and difficult concepts that needs an analytical mind. They are also believed to be a useful tool for developing students' interpersonal, communication and analytical skills as well as their creativity and critical thinking skills and dispositions. Analysing these representative responses, classroom discussions appear to be a great methodology for the development of critical thinking and for engaging students more throughout the course where they learn to respect others' perspectives and be flexible and open- minded.

5.3.3.2 Debates

Five teachers advocated the use of debates for the development of students' critical thinking. Debates are a useful activity in which students take turns in speaking and defending their arguments against their opponents; the debate involves listening carefully to the evidence used in supporting a position and analysing it thoroughly. In this regard, teacher Amina stated that: "I often opt for classroom debates as a strategy for students' critical thinking development as I see it very beneficial especially in creating a competitive learning environment which allows students to be more focused, analytical, selective and able to examine controversial topics". In addition to them being useful for improving students listening and speaking skills, debates are helpful for presenting and evidencing arguments in trying to convince others of differing perspectives.

Razika noted that: "debates are amongst the best ways for critical thinking development; they work as a tool for evaluating arguments and producing logical convincing ones". In this essence, debates are an excellent way to develop critical thinking skills. They provide an opportunity to evaluate arguments and create logical, convincing ones and also help students to develop their communication skills and learn how to present their ideas in a persuasive manner by becoming more aware of the different perspectives and the nuances of complex topics. One of the teachers explained how these debates occur in the classroom, Mohammed said: "my students work in groups or in pairs to produce and elaborate their arguments and present them in front of their classmates who in turn listen carefully to produce their opposing arguments as well. This strategy teaches students skills of argumentation, evaluation, analysis and communication". The teacher advocates that debates are particularly useful in supporting the development of students' critical thinking through teaching students a set of skills required for the critical thinking process. Therefore, debates are amongst the preferred strategies for the support of students' critical thinking development that teachers consider being very helpful and engaging.

5.3.3.3 Workshops

These are academic meetings where students engage in a discussion or an activity around a particular subject or project; they are thought to be effective in the development of students' critical thinking. Among the three teachers who advocated the usefulness of workshops, Soumia who stated that: "workshops are great for students' improvement of critical thinking skills and thus an improvement in their performance. The students engage in an interactive environment and discuss a specific topic where they exchange ideas and generate new ones

and possibly find solutions for unresolved issues". Workshops then provide an interactive and engaging environment for students to learn and practice critical thinking. Through workshops, students can learn how to identify problems, analyse information, develop solutions, and evaluate outcomes. Additionally, workshops can help students develop their communication skills by allowing them to collaborate with their peers and discuss their ideas and as a consequence help students become more confident in their ability to think critically and make decisions. On her part, Souad explained that it is useful for students to be engaged in such an activity. She said: "workshops work best for engaging students in fruitful discussions and active learning and consequently improve students' critical thinking skills. This means that these teachers are convinced that workshops are a great tool for developing students' critical thinking as they prompt developing skills such as argumentation, communication, evaluation of knowledge and problem solving.

5.3.3.4 Brainstorming

Either individually or in groups, brainstorming is a strategy where students try to generate innovative ideas and solutions around a particular topic without any inhibitions by thinking freely and spontaneously. Only two out of sixteen teachers declared their implementation of the brainstorming strategy to enhance students' critical thinking as they believe it entails creativity and the evaluation of ideas that are generated after a process of reflection and analysis. As Dalia supposed: "brainstorming is particularly useful in the development of critical thinking as it involves skills of reflection, analysis, evaluation and creativity. I sometimes opt for this strategy as I find it motivating and encouraging to generate innovative ideas and find solutions for problems". From this teacher's part, brainstorming can be used in educational settings to help students develop their critical thinking skills through the involvement of higher order skills such as analysis evaluation and reflection which work together to solve problems and suggest solutions.

Omar also advocated the use of brainstorming among other strategies to help students develop their approaches of thinking in the search for the most convenient solutions. He stated: "it is of a huge importance to use different strategies to support the development of critical thinking and brainstorming is one of my favourites as students work together to produce various ideas, define problems, mind map and suggest practical solutions". It is evoked here that students' critical thinking can be developed through the brainstorming methodology which involves the use of creative thinking, problem solving, and collaboration to come up with innovative solutions to given problems and phenomena.

5.3.3.5 Problem-solving activities

Four other teachers advocated the usefulness of problem-solving activities in the development of critical thinking. Almost the same teachers (Souad, Selma, Mustafa) who have previously advocated the importance of the development of critical thinking for its usefulness in solving problems and making decisions clarified the role this kind of activities play in developing rational thinking, generating plausible solutions and making sound decisions. These activities are made for students to take their responsibility in understanding, defining and resolving issues they face in classrooms. In this essence, Souad has denoted that: "this type of activities does not only teach students to define problems and find solutions to them, but it also truly teaches students to be evaluative and selective of these solutions. Nevertheless, it encourages students to be reflective, analytical and more able to take decisions and act upon them". This means that teachers believe that these activities help students in developing their reflection and analysis skills to arrive at convenient solutions after a process of evaluation and selection which in turn improves students' critical thinking and enables their creative thinking as well.

Another teacher sees problem solving activities as a necessity for the development of critical thinking in educational settings; she claims that: "problem solving activities engage students in an ongoing process where they face issues that need higher order skills namely reflection, analysis and evaluation to arrive at satisfactory solutions. That is why these activities must be an essential part of the curriculum"(Selma). The teacher advocates the integration of these kind of activities within the lesson plan for their importance and their long-term effects on students' critical thinking skills development. Mustafa as well commented on the importance of problem-solving activities in creating a dynamic atmosphere for learning that supports the development of students' critical thinking. He said: "they make the classroom more vibrant and energetic and mostly welcoming of different perspectives and different solutions to complex problems that need higher levels of thinking". The teacher pointed out to the idea that these types of activities create a vibrant and thought-provoking environment for students to learn and practice their skills with the most respect and an open-mindedness. In brief, the problem solving activity is one of the practices that teachers believe are supporting the development of critical thinking that must be included within the curriculum.

5.3.3.6 Questioning

Four teachers (Hanan, Jamila, Abdullah and Kamal) think that teaching students to ask questions in the classroom encourages their critical thinking development as it helps much in resolving confusion and finding satisfying logical answers. Regarding this claim, Hanan stated: "questions such as when , where, how , why and by which means or about the source of information given are amongst the purposeful questions asked by students. They help to dig dipper and beyond the surface and allow the student to understand matters and provide meaningful responses and thus work as a magical strategy for developing students' critical thinking". The teacher believed that inquisitiveness prompts reflective and analytical skills in students and hence help in making inferences to understand different phenomena.

Questions then trigger higher order skills to provide valid and meaningful answers. In this regard, Jamila agrees that questioning is valuable in promoting students' critical thinking development, but she explained that "although questioning is an essential element in critical thinking, questions should be posed in a supportive atmosphere of learning, otherwise they will turn to a negative learning opportunity". This means that when questions are posed in a supportive atmosphere of learning, they can be used to help students explore ideas, develop their understanding and build on their knowledge. This type of questioning as viewed by Jamila encourages critical thinking by allowing students to think more deeply about the material and produce their own answers after a process of analysis and reflection. In contrast, when questions are posed in an improper way, they can be intimidating and lead students to feeling discouraged or overwhelmed and thus unable to reflect or make inferences. This in turn does not support students' critical thinking development. For these teachers then, questioning appears to be a good strategy to enhance students' critical thinking as it plays a great role in making students reflect, analyse, compare and evaluate knowledge before responding and thus think critically, yet it should be used carefully and in a positive learning environment to be effective.

5.3.3.7 Students' self- assessment

This methodology appeared to have a significant impact on critical thinking development as Amina, Dalia and Jalal indicated. This type of activity allows students to reflect upon their strengths or weaknesses and improve their skills of evaluation and analysis in addition to learning to be autonomous, independent and responsible for their own education. Amina stated in this essence that : "encouraging students to assess their own writing for example makes them reflective and analytical of their own learning; they even learn to be selective and

evaluative of the knowledge they gain, and they keep checking its relevance and significance and strive to being reasonable and rational". The teachers advocate that self-assessment can be used as a tool to help students become more aware of their own thought processes, allowing them to better evaluate the quality of their work and make decisions based on reasonable evidence rather than assumptions.

Jalal added in this matter that "self- assessment helps to identify misconceptions and try to avoid them, and it keeps the student focused and cautious in taking things for granted". These view denote that self-assessment is considered as an advantageous methodology for the development of critical thinking for it helps students confront misconceptions by encouraging them to think critically about solutions and consider logical evidence. Additionally, Dalia evoked the idea that self- assessment teaches students not to be rigid in their opinions but seek logical alternative perspectives after a process of evaluation and hence be flexible and respectful of others' viewpoints. Although this teacher did not acknowledge the skills plus dispositions view in her conceptualisation of critical thinking, yet she pointed out here to flexibility, open-mindedness and willingness to seek alternative perspectives dispositions that self- assessment could develop in students along with critical thinking skills.

Table 5.1

Methodologies used by Teachers for Students' Critical Thinking Development

Methodology	Discussions	Questioning	Problem solving	Debates	Workshops	Brainstorming	Self-assessment
SELMA	✓		✓				
RIAD	✓		✓		✓		

JALAL	✓						✓
RAZIKA	✓			✓			
MUSTAFA			✓				
MOUHAMED	✓			✓			
AMINA	✓			✓			✓
MAHMOUD	✓						
OMAR						✓	
0. SOUAD	✓		✓		✓		
1. ABDULLAH		✓		✓			
2. SOUMIA	✓				✓		
3. HANAN	✓	✓					
4. JAMILA	✓	✓					
5. KAMAL	✓	✓		✓			
6. DALIA	✓					✓	✓

To sum up, there is clearly an agreement between the interviewees about their support of critical thinking in classrooms as they all believe they do so to a limited extent, but the way in which they do that differed immensely as teachers used different methodologies in fostering the development of students' critical thinking. Still, all of these methodologies are believed

to be of a significant importance for that goal. Discussions, questioning, debates and problem solving activities appear to be favourites for the interviewed teachers when developing students' critical thinking. However, the other methodologies namely brainstorming, workshops and self-assessment are not very often implemented by the teachers in this regard and henceforth are less preferred. It is apparent that teachers have critical thinking as an educational aim that should be fulfilled and each having his/ her way in doing so, yet still it is not frequently practiced due to interfering hindrances that will be examined in the next section.

5.4 Theme Three: Barriers to the development of students' critical thinking

The third identified theme in the current study considers university teachers' insights on the barriers impeding their students' critical thinking development in the Algerian higher education context. This theme clearly gives answers to what is thought to hinder teachers' support of the development of their students' critical thinking as having rich data that identifies what challenges teachers in their support of students' critical thinking development contributes to our understanding of the perspectives of teachers in the Algerian higher education context. The theme is divided into five sub- themes where it was revealed that teachers have different views considering what obstacles are hindering their support of the development of students 'critical thinking. The teachers described different barriers some are related to contextual realities, others related to students, teachers and policies of the higher education system in addition to cultural hindrances. These are classified into categories and sub-categories which will be analysed in this section thoroughly besides they will be summarised in figure number 5.6.

5.4.1 Contextual barriers

Seven out of the sixteen teachers interviewed in this study have claimed that the classroom reality is a huge hindrance to the support of the development of critical thinking. These teachers think that the learning and teaching context has a great deal of importance when it comes to promoting students' critical thinking. Among these contextual barriers are time constraints, the length of syllabus and crowdedness of classrooms.

5.4.1.1 Time Constrains and Syllabus Length

The teachers in this sub-category declared that the shortage in time allocated for the modules does not encourage teachers to invest some time in embedding activities for the development of students' critical thinking within the syllabus; Selma maintained: " I barely

have time to cover the lesson topics; it is just one hour and a half in a week for my module; there is a very large amount of information that I have to deliver and critical thinking methodologies are a bit time- consuming so this is a bit challenging". Regarding the syllabus load, the teachers believed that the long syllabus to be covered created a problem for them to focus on developing students' critical thinking. Jalal declared that: "it is almost impossible to give students opportunities to express their opinion and discuss their views critically on a frequent basis as this is time- consuming as I have a long syllabus to be covered". This means that teachers are concerned about the preparation and implementation of practices that support the development of students' critical thinking owing to their constant worry about covering the whole syllabus in due time. Abdullah as well explained that: " the syllabus load is a hindering factor for critical thinking development; it is not easy to deal with this burden particularly as many topics need to be covered and the teacher has no choice but to finish it in time, so here the quantity is much prioritised over the quality which is a problem that policy makers need to pay attention to". The teachers believe that these contextual factors are two interrelated impediments for the development of critical thinking that created a huge problem for teachers who are asking policy makers to alleviate that burden a little bit for a better education that serves students' critical thinking development.

5.4.1.2 Crowdedness

Crowdedness of classrooms is also considered as an impediment for the development of students' critical thinking. Teachers complained about the crowded classrooms and considered them as a barrier to supporting the development of students' critical thinking for they perturbate the teaching and learning process in different ways. Dalia has claimed that: "crowded classrooms forbid teachers from doing their job at its best; you will find forty or fifty students in one group, and this prevents the teacher from engaging all students in the educational process, besides it is difficult to control such classes. This clearly creates a huge obstacle for critical thinking development". Crowdedness is then another issue that teachers are discontented about since it could be a hindrance for creating an enthusiastic positive atmosphere for the teaching- learning process. Furthermore, with too many students in the classroom, it is hard for teachers to give each student the individual attention they need; in addition, it is difficult for students themselves to engage in an analytical and reflective thinking or even to collaborate with their peers. This limits the opportunities for students to practice their critical thinking skills and develop their understanding of complex topics and for teachers to support their students' critical thinking development conveniently.

5.4.2 Student Related Barriers

The interviews have revealed that some students' related barriers have a negative influence on the teachers' support of the development of their critical thinking. Among these factors are egocentrism, shyness, indifference, the lack of discipline related knowledge and lastly the lack of adequate knowledge about critical thinking. These barriers will be analysed thoroughly in this section.

5.4.2.1 Egocentrism

Egocentrism is a trait defining a person who neither accepts nor understands any perspective other than his/her own. This feature forbids a person from developing his/ her critical thinking as the latter needs an open mind and a respect for others' views. Mouhammed commented: "some students are obstinate; they do not take others' perspectives into account or even try to consider and evaluate their own thoughts. I experienced this with many students and tried to teach them flexibility in thought and tolerance for their self and critical thinking development, but still, it is difficult for them to tolerate alternatives and they even refuse constructive feedback and criticism". It appears that although this teacher had not acknowledged the skills plus disposition view of critical thinking, yet he understands that students need an open mind, tolerance and a flexibility in thought to practise critical thinking. Egocentrism and obstinacy then are major impediments for developing students' critical thinking because this can lead to a lack of openness to new ideas and perspectives. When students are too focused on their own opinions and beliefs, they may be less likely to consider other points of view or even to reflect on their own beliefs and thus they will not be engaging in the process of analysing and evaluating information from multiple sources and hence will not engage in critical thinking.

5.4.2.2 Shyness

It is hard for the teachers to help their shy students develop their critical thinking because they may be hesitant to voice their opinions or ask questions in a classroom setting. This is what Mustafa thinks about shy students and the difficulty of critical thinking development. He stated that: " it is hard for shy students to develop critical thinking, as shyness prevents them from communicating their views or trying to defend and discuss them. They find it difficult to express themselves in front of others" . He has added as well that: "shyness makes students unconfident, discouraged and unwilling to think out of the box which creates a huge obstacle for both their self- development and also for their critical thinking development".

Shy students may not feel comfortable participating in group discussions or debates; they may also be less likely to take risks and try new ideas which are important features for developing their critical thinking. This teacher's view evokes the idea that teachers should solve such a problem through, for instance, encouraging shy students to participate in group activities that involve problem-solving and critical thinking and create a safe and supportive environment where all students feel comfortable expressing their opinions and sharing their ideas.

5.4.2.3 Indifference

Few teachers interviewed in this study think that because critical thinking is a cognitive process that demands higher order skills such as reflection and analysis, some students tend to be very lazy and indifferent to developing their critical thinking. In this regard, Dalia explained that: "although they are aware of its importance. These students are careless even for preparing their lessons or doing their activities and thus they developed a habit of an uninterest in such a practice". From this teacher's perspective, these students are inconsiderate to make an effort to enhance their critical thinking; they appear to lack the willingness and motivation to do so as they are not seeking any rational thinking, new perspectives or engage in meaningful discussions with others in order to broaden their understanding and develop their critical thinking skills. This implies that these teachers believe that their students lack the disposition to exercise critical thinking as when these students are indifferent, they may not be willing to challenge themselves in order to push their thinking further. This can lead to a stagnation of their thinking as they become comfortable with the status quo and do not strive for further development. Thus, students' indifference from the interviewees' perspectives can negatively impact their critical thinking development.

5.4.2.4 Lack of Discipline-Related Knowledge

Interviewees have declared their concern about students' lack of background knowledge needed in their domains; they believe that students seem ignorant of the discipline-related knowledge needed to exercise critical thinking. This issue has created an obstacle for their exercise and development of critical thinking. Jamila sees these students as being "too limited and not destined for university". This teacher finds students lacking essential background knowledge and information needed to perform critical thinking and thus they fail to develop it. She elaborated: " I teach English, and students have a deficiency in vocabulary, therefore, they cannot understand nor evaluate others' viewpoints or arguments". She explained that the lack of adequate vocabulary creates a hindrance to critical thinking development. Without the

necessary knowledge, it is difficult for these teachers to develop their students' critical thinking skills as it provides the foundation for understanding complex concepts, analysing information and forming reasoned conclusions. Without the necessary knowledge, it is difficult to evaluate evidence, draw logical inferences and make sound decisions.

Moreover, Amina has declared that: "it is impossible for students to evaluate or weigh the validity and reliability of the evidence in a particular field; let us take political sciences as an example without an understanding of the basic principles of politics, one cannot exercise critical thinking with this deficiency of information to arrive at satisfying, logical and reliable knowledge". The teachers pointed out to the idea that adequate background knowledge of a subject is essential for developing students' critical thinking even though one possesses the needed skills of critical thinking.

5.4.2.5 Lack of adequate Knowledge about Critical Thinking

A small number of teachers believed that some students are unaware of what critical thinking in itself is and which skills and dispositions it involves and thereafter they fail to develop it. Razika said: "this lack of awareness about critical thinking resulted in a failure in its development. Some students do not know what critical thinking is, and some just relate it to negative criticism. Teachers should absolutely make critical thinking clearer for their students to understand and apply it". Without identifying or understanding what critical thinking is and which skills or dispositions it does involve, it is impossible for students to develop their critical thinking. The teacher acknowledges that it is the teachers' duty to make critical thinking more comprehensible for students.

In the same line of thought, Kamal explained that: " to apply critical thinking, one needs first to know what the skills of evaluation, analysis, reflection and argumentation are and how to apply them. We see students ignorant of these skills and the critical thinking dispositions and for sure they end up failing to think critically for their ignorance". This means that knowledge of the critical thinking skills and dispositions is also important for critical thinking to be applied and then developed in classrooms and it is the teacher' role to clarify this concept to their students and help them to foster it. It should be noted here that teachers (Razika, Jamila, Soumia and Kamal) who explained the importance of recognising what critical thinking means and which skills and dispositions does the process involve are among the same teachers who had a skills plus dispositions conceptualisation of critical thinking as they

believe that it is really important for students to acquire the adequate knowledge of both the critical thinking skills and dispositions, as these both work together to make a critical thought.

5.4.3 Teacher Related Barriers

Some teachers proclaimed that teachers themselves have a huge responsibility in creating barriers to the development of their students' critical thinking. It was revealed by the teachers that the majority of them indicated their tendency towards the traditional approach of teaching where they dominate the classroom and talk excessively whereas students listen carefully and remain silent focusing on their educator. These students are described as being passive most of the time. This situation has been indicated by the teachers themselves as a major impediment for the development of students' critical thinking. The teachers explained that this approach to teaching they are implementing where they have their ultimate control in the classroom with the sole objective of transmitting knowledge to their students hinders students' development of any creative or critical thinking. This denotes that these students are discouraged from all forms of interaction, collaboration and communication.

Souad has talked about her experience as a teacher and as she was herself a student:" I am trapped in this pitfall of a silent lesson that I hated before when I was a student, but I need to control the crowdedness of the classroom, manage time and make sure students are well - equipped with the right and sufficient knowledge, so my classroom is mostly teacher- led and students are asked to keep quiet and follow my explanation or take notes which clearly does not help much in their critical thinking development". The teacher admitted her failure to support her students' critical thinking due to her tendency towards the teacher-centred approach which does not engage students in the teaching- learning process and discourage their interaction and communication.

Riad echoed Souad's idea; he commented: "me and some of my colleagues tend to shift to the lecturing mode and deliver lectures that are non- interactive and discussion free; it is the best method to cover as much course content in the shortest time available. Although I am aware of the importance of critical thinking, but it is hard to make it an educational priority while many factors interfere in creating obstacles for the development of this skill". These teachers admitted their implementation of teaching approaches that do not encourage students' development of critical thinking, yet they explained that their tendency towards such approaches is due to some interfering factors which are related to the higher education system (BMD) adopted in the Algerian context itself. In their belief, these factors led to the

negligence of the importance of students' development of critical thinking and the integration of methodologies that support its development within the curriculum.

5.4.4 Policy Related Barriers

The BMD system, which stands for Licence-Master-Doctorat (Bachelor-Master-Doctorate), as indicated earlier in chapter number two (see section 2.5) is a three-tier degree system that was adopted by the Algerian higher education system in 2004. Under this system, students are required to complete a three-year bachelor's degree program before they can pursue a two-year master's degree program and then a three-year doctoral program. This system is designed to provide students with an opportunity to gain more specialised knowledge and skills in their chosen field of study. However, it is believed that the BMD system created so many hindrances to the support of the development of critical thinking although in theory it states that students' critical thinking development should be an educational priority. Twelve out of sixteen teachers, which is a majority of participants in this study, confirmed that the BMD system with its policies have failed to support students 'critical thinking development and that is due to several reasons caused by the system itself. These are the lack of resources, , the lack of teachers' training and prioritising quantity over quality. These will be examined thoroughly in this section.

5.4.4.1 The lack of resources

In light of the data gathered from the interviews, the majority of teachers believed that the BMD system does not provide suitable conditions for the integration and development of critical thinking within the curriculum; however, it created many obstacles such as classroom crowdedness, syllabus load and time constraints. Some of these teachers also pointed out to the lack of resources and equipment. These teachers believe that the BMD system has not offered enough resources and funding for the teaching and learning process that is why it is incapable to cater for the needs of teachers to support the development of their students' critical thinking. Souad asserted that: " in the light of the current conditions at the level of university and the insufficient means, it is impossible to achieve that goal". This indicates that teachers suppose that the BMD system has failed to equip the classrooms and provide resources for the teachers to enable them to work towards the integration and development of critical thinking.

Furthermore, Jalal also had worries about the lack of resources and the time constraints. He stated that: "neither the time nor the lack of resources permits the development of critical

thinking as I mentioned it before; teachers need to cover the whole syllabus that is filled with so much information in the shortest time allocated and without enough equipment or teaching aids, so it is almost impossible to cater for students' critical thinking development having to deal with the current situation". In addition to the time constraints, the teacher was concerned with the unavailability of adequate resources to help in the teaching and learning process; he was referring to computers, technology materials and a limited access to quality education and publications which are missing in most Algerian classrooms. These conditions therefore have disrupted any initiatives to foster the development of students' critical thinking.

5.4.4.2 Teachers 'lack of training

Some teachers think that the BMD system does not support the development of students' critical thinking due to the fact that it has not given any importance to the training of teachers who would work on enhancing students' critical thinking. Without this specialised training, teachers may not be able to provide their students with the necessary tools and strategies to develop their critical thinking.

In this regard, Mahmoud is one of the teachers who admitted that he and many of his other colleagues have not had a chance of a training where critical thinking was the framework. He said: "we are honestly not prepared to effectively instil critical thinking and embed it within the curriculum and particularly in our disciplines; we received no formal training that considered critical thinking development; I myself am doing it based on some of my research and background knowledge only as I see it important for students to be developed". This denotes that teachers lack training in the field of critical thinking which resulted in them not being able to effectively teach their students how to think critically. Without proper instruction, students may not be able to recognise when they are engaging in the process of critical thinking or how to apply it in different contexts. He has also added that: " a training program is absolutely needed for teachers to focus on embedding critical thinking in their courses. The system should consider that seriously as to achieve this prominent objective". Therefore, and based on the high importance of students' development of critical thinking, the teachers are calling upon dedicated training programs in the field of critical thinking.

Moreover, Soumia asserted: "teachers trained to incorporate critical thinking in their lesson plan better support their students' critical thinking development. The BMD system is required to prepare qualified teachers who can act upon integrating critical thinking skills in their lesson plan and focus on its development in classrooms. There should be some kind of

training programs for teachers to better their time management skills, lesson planning, assessment and integration of critical thinking skills within their disciplines". The teacher pointed out to the idea that teachers who received an adequate training that is concerned about the integration and the development of critical thinking in classrooms encourage their students to think critically and engage in activities that foster their thinking skills. The teacher also advocates that critical thinking should be incorporated in teacher training programs and henceforth be a priority in teacher education so that it could be applied and developed in classrooms.

5.4.4.3 Quantity over quality

Some of the teachers argued that the higher education system and policies focus only on the quantity rather than the quality of education. As a result, students are not given the opportunity to develop their critical thinking and are instead encouraged to simply memorise what they have learned.

Amina has declared that: "I do not think it succeeded in developing students' critical thinking because this system depends heavily on quantity not quality. Critical thinking may be set as an educational objective, but that is only theoretical; in reality it is not; the BMD is designed to have more graduates by making tertiary education accessible to many groups of students, but it neglected improving the quality of the learning and teaching experience and the development of students themselves either on their professional or academic level". This means that from theses teachers' perspective, the BMD system's main focus is to increase the number of graduates and maximise students' chances of success rather than their personal, professional or even academic development and henceforth prioritise quantity over quality. Therefore, in an emphasis on the success of a huge number of students, the BMD system has failed to develop students' critical thinking.

Moreover, Abdullah described himself in this system as "being haunted by the submission of students' grades and he referred to his students as "learners who are always trapped in a circle of calculating sufficient credits for getting a qualification". Indeed, the BMD system in the Algerian higher education is a credit-based system that focuses on the accumulation of credits rather than the development of some skills and abilities such as problem-solving and analytical skills which can be applicable in real world situations. In these teaches' belief, this system does not provide students with the opportunity to engage in

meaningful dialogue or debate with their peers, which is essential for developing their critical thinking.

5.4.4.4 A Memorisation-based Assessment

Other teachers believed that the BMD as a system has not yet succeeded in creating productive, effective and creative students who are able to analyse, interpret, synthesise and evaluate information reasonably. Still, the system is mostly based on memorisation and the recall of information only. Hanan clarified that: "in this system, students take information as a commodity which must be recalled in exams rather than as information that must be analysed and discussed". Omar had a similar idea since he emphasised the great role of skills such as analysis, interpretation and evaluation of information in developing students' critical thinking and that the failures of the system have led students to be more passive and indifferent as he called it a system of rote memorisation that does not assess the wider range of skills students might have acquired. Thus, information retention is one of the negative consequences of the BMD system that is creating a huge hindrance to the development of students' critical thinking.

Teachers also admitted their tendency towards the use of some forms of assessment that encourages information retention only as does the whole system of examination that supports rote memorisation. Hanan said "most of the time, we rely on assessment forms that only require information retention; this type of assessment triggers passive recapitulation of theoretical input only and does not serve critical thinking development". This means that assessment can hinder the development of students' critical thinking if it is used as a tool to measure the recall of facts, rather than as an opportunity to evaluate and analyse information. On the basis of the teachers' views, when assessment is focused on memorisation, students are not encouraged to think critically about what they are learning. They are instead encouraged to simply remember some previously acquired information.

This problem is explained by Omar as well who claims that "the system of assessment is still content based; students are required to recall information to get good marks, and this creates a huge hindrance to critical thinking development. Assessment should rely more on applying critical thinking and less on memorising content". These teachers admitted this type of assessment does not foster the development of critical thinking which require students to analyse, evaluate, and synthesise information in order to draw out conclusions and make

informed decisions. They have also pointed out that this is a problem that should not be overlooked for its significant impact on the development of students' critical thinking.

5.4.4.5 Failure to bridge theory and practice

The teachers described the policy of the BMD system in terms of its support to the development of students' critical thinking as merely theoretical. Four participants from the sixteen interviewees presume that the BMD system embraces the development of critical thinking in theory. These teachers claimed that students' critical thinking development is stated as one of the system's main objectives as dictated clearly in the systems written guidelines. In this regard, Mustafa stated that: "it is clearly mentioned in the ministry's guide of the BMD system that it is important for teachers to develop their students' critical mind and curiosity and as well as working towards students' autonomy and success". This indicates that on the basis of the declarations found in the ministry's guide about the BMD system forwarded to the teachers, students' critical thinking development is one of the system's priorities.

Additionally, Dalia said that: "the BMD system supports the development of students ' critical thinking hypothetically due to the introduction of certain modules like oral presentation techniques, reading strategies and discourse analysis. These modules are thought to trigger students' curiosity, research, communication, sense of judgment and reflection and henceforth prompts critical thinking". It appears from the teachers' views that the system supposedly encourages the development of students' critical thinking by initiating modules that are believed to stimulate students' inquisitiveness, communication, analysis and evaluation, hence encouraging their critical thinking. The teacher believes that this is merely an ink on paper and is not really practised in classrooms.

Furthermore, Mouhammed well-explained that: "the BMD system in the Algerian higher education is designed to promote critical thinking in theory, but not in practice. This system focuses on the development of theoretical knowledge and skills, rather than the practical application of those skills. It sometimes encourages students to think critically about the material they are studying, but it does not provide them with opportunities to apply their knowledge and skills in real-world situations. The problem is with the students themselves too, they have become accustomed to passive learning before enrolling to university courses, thus they developed an obstinacy towards developing their critical thinking and creative skills and this became a hard and an unfeasible task for teachers too". In this teacher's belief, the

BMD system in the Algerian higher education context encourages students to think critically about the material they are studying, but it does not provide them with opportunities to apply their knowledge and skills in practice. In addition, students have become accustomed to passive learning, making it difficult for teachers to encourage them to develop their critical thinking and creative skills.

The BMD system in the Algerian higher education is a system that is designed to promote critical thinking skills among students. However, in reality, the system does not provide the necessary resources or opportunities for the students and teachers alike, and it created other hindrances such as the ones related to the classroom reality which impede the support of students to develop these skills . Thus, the teachers' views denote the failure of the BMD system to bridge the gap between the theory around critical thinking and its practice in the Algerian higher education context. As a result, reflecting teachers' views, students are unable to explore different perspectives or challenge existing ideas and essentially, they still lack critical thinking.

5.4.5 Cultural Barriers

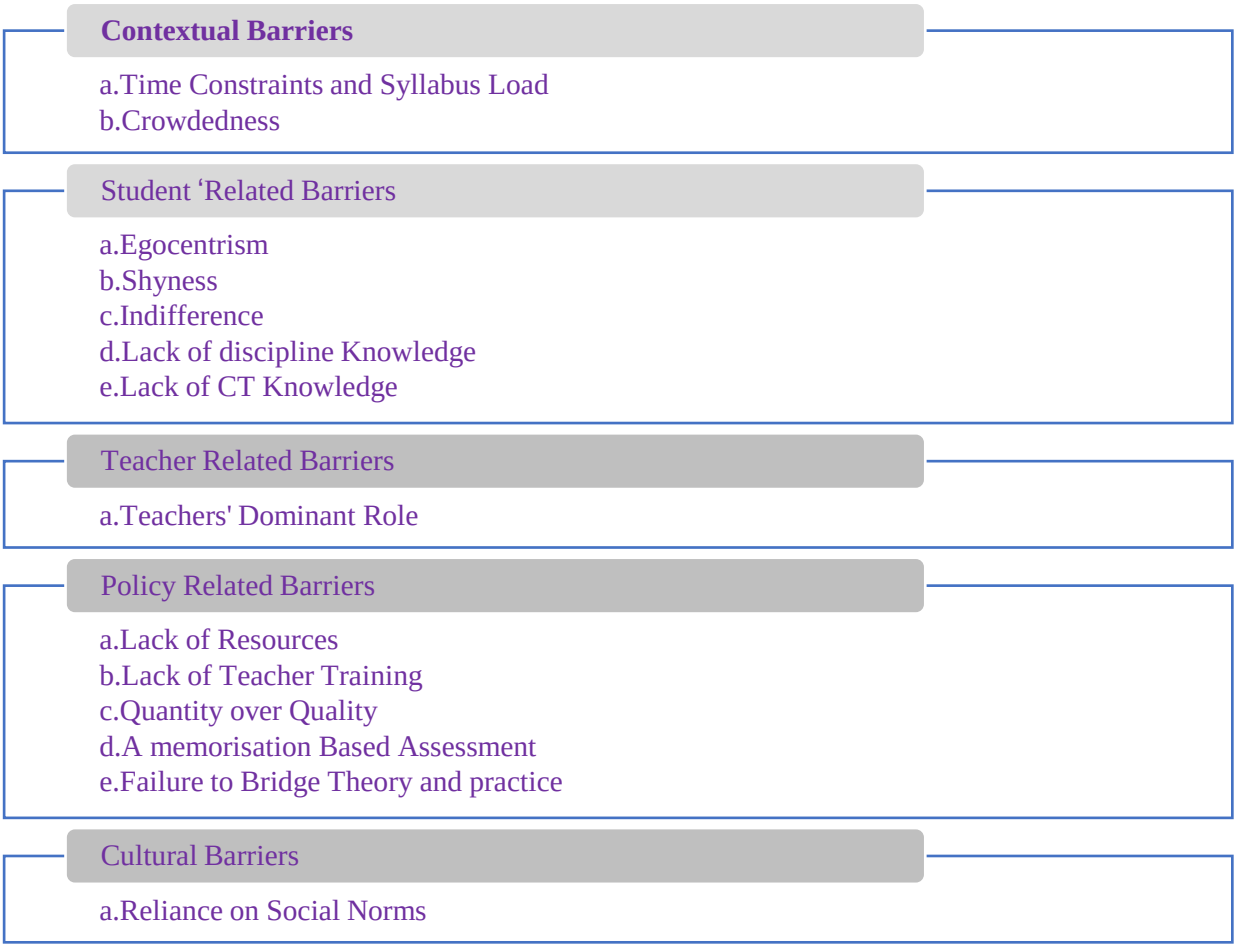
Only one of the interviewees cited a social barrier to the development of students' critical thinking; this view could not be neglected as it seems a very interesting point worth mentioning in this data analysis. Razika argued that: "one of the major barriers in my belief is that students often rely on the accepted norms and values of society when making decisions or solving problems, rather than considering alternative perspectives or questioning the ideas presented to them". She described the tendency of students who are members of their society to rely on tradition and authority when solving problems or making decisions and thus they take things for granted. This implies that such thinking can lead students to accept ideas without questioning them and considering alternative perspectives. It can also lead people to ignore evidence and facts that contradict their beliefs and assumptions although new perspectives might be more effective and reliable.

In conclusion, there appeared from the discussion of the different answers of the interviewees concerning the impediments to the development of students' critical thinking that there are so many hindrances interfering in the process (see Figure 5.6). Some of them are context-related, some are student related, and others are teacher- related barriers or policy related barriers in addition to the existence of some cultural hindrances. These barriers do not only hinder the development of critical thinking but even its application and practice in many

situations. Teachers are aware of these barriers and admit their failure as well. Despite this difficult situation, these teachers are to some extent doing their best to find ways to teach their students what critical thinking is , how it should be applied and in what ways it could be developed as they know well how important critical thinking is and what role it plays in the development of the individuals and the society as a whole. In short, critical thinking has a significant importance and thus should not be overlooked or ignored; it should be taught and developed for students' development and empowerment.

Figure 5.6

A Summary of Critical Thinking Hindrance from the Teachers' Perspectives



5.5 Conclusion

This chapter discussed the findings of the semi-structured interviews conducted with sixteen teachers from various disciplines in the Algerian higher education context. The purpose of the study was to explore how these teachers conceptualise and foster critical

thinking among their students and what factors that hinder the success of such a process. The analysis addressed the research questions: how the Algerian university teachers understand critical thinking, how they support students' development of critical thinking skills and discussed also which impediments are hindering the development of students' critical thinking. The results of the study were organised and analysed according to the research questions brought up earlier. The findings will be discussed thoroughly in the next chapter as generated themes have been recognised in this regard.

Chapter Six: Discussion of the Findings

6.1 Introduction

Globally, critical thinking has been demarcated among the 21st century skills that students should develop whether in primary, secondary or tertiary education (Liu et al., 2014). Consequently, numerous studies have emerged investigating such a topic with an intention to integrate it within the curriculum. Yet, less research particularly in the Algerian higher education context is dedicated to understanding what this concept means, what does it entail or how it could be developed. For this reason, the current study was designed to investigate how a group of Algerian university teachers understand the concept of critical thinking, how they conceptualise it, to what extent they believe they support its development, and by which means they do this in their contexts. Accordingly, the study focused on exploring issues of definition, position, development and hindrances impeding critical thinking within the Algerian higher education context. In the previous chapter the findings from the interviews were presented and the generated themes were analysed. Henceforth, this chapter will be dedicated to a discussion of the research findings obtained from these interviews. This chapter will be the kernel of the current research as it narrows down to address the research questions where respondents' answers are linked together to arrive at areas of difference and overlaps. Then, the data culled from the intersection of respondents' answers extracted from the interviews I presented in Chapter 5 are discussed in the light of the foregoing reviewed literature. The chapter then ends with a conclusion which summarises the main findings of the study with regard to the research questions and literature.

6.2 A Conceptualisation of critical thinking

Findings presented in chapter 5 of the present study have provided a conceptualisation of critical thinking and demarcated the overlap in teachers' understanding of this concept in the context of the Algerian higher education. The findings answered the first research question as the interviewees' responses involved their definitions of critical thinking and what it entails besides capturing the teachers' insights about the importance of developing students' critical thinking at different levels. In this section, I will be discussing these findings and how they fit into the existing literature that explores issues of definition and importance concerning critical thinking.

6.2.1 Teachers' understanding of critical thinking

The concept of critical thinking as many other concepts, is used dubiously, giving it different meanings (Penkauskienė et al., 2019). For the need to have a clear conceptualisation of critical thinking, Kuhn (1999) argued that it is a requirement to have a more systematic and precise definition of critical thinking if teaching it is to be a meaningful educational goal. Choy and Cheah (2009) also advocated that the way professors perceive critical thinking and the possibility of teaching the concept direct the learning-teaching process in their classrooms. Consequently, it is important to have a clear conceptualisation of critical thinking in order to inform instructional theory, which in turn could inform practice within classrooms. Furthermore, it is worth mentioning that the majority of the interviewed teachers in the present study have provided definitions where they explained what they think critical thinking is, what it involves or how it works and elaborated their answers with details about its importance at different levels, yet few who have only suggested short but expressive descriptions of the concept.

Essentially, the findings show that the definitions of critical thinking held by the teachers in this study fall broadly into two categories; those who focus on the dispositional aspects of critical thinking and those who focus on critical thinking as a set of skills. This means that some teachers associated critical thinking with a set of skills. Others, however, have linked critical thinking to dispositional aspects such as flexibility, tolerance, open-mindedness and inquisitiveness which are believed to be necessary for the process of critical thinking; a view that aligns clearly with Ennis's definition of critical thinking. Unlike these findings of the Algerian context, the Moroccan higher education is limited to two critical thinking skills: argument evaluation and argument construction having more of a diagnostic and evaluative nature (Ouahani & Hiba, 2023). Thus, the insights of teachers concerning the definition of critical thinking which are spotted in the Algerian context are similar to western views due to the given overlaps found in teachers' views and conceptualisation of critical thinking and the different skills indicated in the process. In consistence, the literature suggested that critical thinking could be understood differently as clearly noted the works of Ennis 1992, Facione, 1998, Halpern, 2003 and Moore, 2011 who shared a consensus about a disagreement on a single definition of this debatable concept in which it was reported that:" a single, widely accepted, cross-disciplinary definition for critical thinking still does not exist" (Sanders & Moulenbelt, 2011, p. 38).

Findings of the current study regarding Algerian teachers' conceptualisation of critical thinking revealed that there is an overlap in teachers' conceptualisation of critical thinking within the context of their teaching which means that teachers' understanding of critical thinking in the present study is differing as they are not sharing a single definition of the concept. This could signify the need for policy makers for instance to further train teachers in the field of critical thinking and expand their understanding of such a concept. Some of these teachers show almost an agreement upon the nature of critical thinking as they believe it to be merely a cognitive process involving a set of skills, but few others perceive it as a process that cannot be accomplished without dispositions. The situation aligns with the findings of Liu et al. (2014) who described the situation as : "although the definitions in various frameworks overlap, they also vary to a large degree in terms of the core features underlying critical thinking" (p.2). These different conceptualisations again demarcate the complexity of such a concept and the continuing debate about a single definition of critical thinking in Algeria or worldwide. These findings could particularly help in expanding teachers' understanding of critical thinking in the Algerian context.

The findings show that the majority of teachers consider critical thinking to be a process that entails skills such as interpretation, questioning, analysis, synthesis, reflection, argumentation and evaluation. This conceptualisation of critical thinking focused more on the procedure itself, yet within this conceptualisation responses emphasised some aspects of this procedure rather than others. In the literature, many researchers adopted such a conceptualisation of critical thinking. Among these is Mulcahy (2008) who relates critical thinking to rational thinking and sound judgment, he said: " critical thinking is an important ability to rationalize one's inner dialog and thought process with the goal of being able to evaluate thinking, feelings, and actions in a disciplined manner" (p.18). Other researchers focused on the analytical, inferential and evaluative aspects of critical thinking as they suggested that: "critical thinking is purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanations of the considerations on which that judgment is based" (Abrami et al., 2015, p.275). Moreover, some of the interviewees emphasised the idea that critical thinking involves higher order thinking skills such as reflection. Holding a similar thought, Ennis (2011) a leading scholar in the field who stated that: "critical thinking is a reflective and reasonable thinking that is focused on deciding what to believe or do"(p.1). Hereafter, this implies that in consistence with the existing research in the field of critical thinking teachers could construct various definitions for critical thinking that understand critical thinking as such a cognitive process

but each emphasising different skills and aspects of this process. For the Algerian context in particular teachers need to expand their horizons and further broaden their views of critical thinking to be able to develop it in students although these views are much similar to a wide array of western thoughts about critical thinking.

The findings also show that few teachers who believe that critical thinking is more than a set of skills since it requires dispositions to be practiced. They indicated that a critical thinker should have the necessary dispositions to exercise critical thinking and without these dispositions this thinking process cannot be accomplished. These teachers stated dispositions such as inquisitiveness, flexibility in thought, accepting alternatives, willingness, tolerance and open- mindedness. It is observed in the literature that many leading scholars have identified critical thinking as skills plus dispositions in their works. Among these, Facione who offered a conceptualisation of critical thinking that is a combination of two dimensions involving both a set of complex cognitive skills, such as interpretation, analysis, inference, and explanation, as well as important personal dispositions including inquisitiveness, open-mindedness, truth-seeking, as well as flexibility and willingness to consider different perspectives (Facione, 1990). According to Paul and Elder (2020) "critical thinking is the art of analysing and evaluating thought processes with a view to improve them" (p.4) They also explained that "critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking. It requires rigorous standards of excellence and mindful command of their use" (p.4) Similarly, Indrasiene et al., (2021) advocated that critical thinking as a concept that could be described as the totality of cognitive skills and dispositions. Thereafter, these teachers' view of critical thinking fits with the definitions found in the literature that sees critical thinking as a multi- faceted process that entails not only some sort of skills but also a collection of dispositions that characterise a critical thinker and which are required to exercise the process of critical thinking.

It is apparent from the findings presented and discussed above that these Algerian teachers have some understanding of the nature of critical thinking. Moreover, their conceptualisation of this concept is relevant to some of the existing definitions in the literature. Yet, only few of them who acknowledge the dispositional aspects of critical thinkers in which Ennis (2015) advocated that the ideal critical thinker can be characterised in somewhat more detail by a set of dispositions and abilities. These teachers did not emphasise the importance of such facets to develop students' critical thinking. Therefore, the failure to cultivate and develop the essential habits of mind that are necessary for effective critical thinking will prevent the exercise and development of critical thinking. Understanding critical thinking is important

for its development which in turn leads to a development of individuals and societies at different levels.

Hitchcock (2015) presumed: "instruction in critical thinking is supposed to improve skills in critical thinking and to foster the dispositions (i.e., behavioural tendencies) of an ideal critical thinker"(p.283). Overall, and from the definitions reviewed earlier, the common conceptualisation of critical thinking from the teachers' perspective in this study would be that critical thinking means arriving at a reliable and valid knowledge after a process of doubt, analysis and evaluation of information as there should be, but big questions asked, different angles to look at and a thinking out of the box with a critical eye and a critical spirit 'a disposition to do so 'without which critical this process cannot be exercised.

6.2.2 Critical thinking is valued by teachers

As anticipated, all the teachers interviewed in this study recognised the importance of critical thinking and the distinguished role that it plays at different levels. Moore (2011) stated that: "in debates about critical thinking, there is perhaps one single point on which virtually all agree, this is that teaching students to be 'critical' in their studies is an intrinsic good and that it is this, perhaps more than anything else, that should be the goal of all higher education" (p.261). This implies that Algerian university teachers recognise critical thinking as an important concept and as a 21st century skill that is widely emphasised and highly demanded at different levels and in different contexts. The findings of the present study are consistent with findings of Ouslimani and Aboubou (2021) who searched critical thinking in a similar context (Batna university, Algeria) to Oum El Bouaghi university; they concluded that the majority of the responding teachers in their study were convinced that critical thinking was essential in their classrooms. They felt that it deepened students' knowledge and made them independent thinkers. They also believed that through critical thinking, students could apply what they learned in real life. Moreover, Nor and Sihes (2021) argued that critical thinking is seen as an important aspect in the educational process since many teachers' objectives incorporate the preparation of students to think critically, which is also a quality required by employers of university graduates. The literature denotes that these teachers are aware that critical thinking is an essential skill in today's world.

Numerous authors offering western and non-western thoughts have agreed that developing students' critical thinking skills is regarded as a highly important educational goal in many societies around the world since it is seen as promoting such disparate qualities as democracy and personal development (Behar-Horenstein & Niu, 2011). Abasaid and Ferreira

(2022) advocated that the importance of critical thinking teaching is its transformative effects on individuals' personal, political, and social perceptions. Therefore, many scholars affirmed the vitality of critical thinking and recognised its value for personal and social development. The analysis of the findings also helped to identify four categories explaining why critical thinking is of a high importance. So, in light of the answers gained from the interviewed teachers, critical thinking is important for: self- development, enhancing students' academic performance, challenging fallacies to find the truth and finally solving problems and taking decisions.

Firstly, it is noted from the findings of this study that some teachers believe that there is a positive relationship between critical thinking and personality development. Critical thinking in their belief helps more in improving personal skills such as communication, argumentation, creativity and self-reflection which in turn supports building students ' personality and character and therefore is vital for society development in general. Many researchers asserted that critical thinking "is central to both personal success and national needs" (Paul, 2004, p. 2). Moreover, Beyer (1995) believes that teaching critical thinking is essential for the well-being of society as a whole. He believes that in order to thrive in a democratic community, people must be able to think critically and make informed decisions about their own lives and the state of the nation. If students are taught to think critically, they can use this skill as a guide for how to live their lives. This implies how crucial critical thinking is in developing the self for the benefit of the society. In a more recent study, some researchers highlighted that: " because of the vitality of critical thinking impacts on individuals, the structured teaching of such concept should be of priority to educators" (Abasaid & Ferreira, 2022, p.175). Thereafter, it appears that there is a call for the integration of critical thinking teaching within the curriculum as it is believed to play a vital role in students' personal and social development in the Algerian context as Lincoln and Kearney indicated : "critical thinking skills may well prove the greatest asset for current graduates, who will surely navigate these uncharted waters in the course of their careers" (p.799).Yet, as we will see in section 6.4 of this discussion, it is not always easy to support and develop students' critical thinking as of many hindrances impeding the teachers from doing so.

Secondly, the findings have also shown that some teachers consider critical thinking development as having a profound impact on students' academic performance and should thereafter be seen as an educational aim that must be fulfilled. This is also evidenced in the literature since different studies have proven the inevitable role that critical thinking plays in

improving students' academic performance. In their cross- correlational study conducted with students in an Iranian university, Ghazivakili et al. (2014) found that the learning styles, critical thinking and academic performance are significantly associated with one another. They claimed in this regard that: "considering the growing importance of critical thinking in enhancing the professional competence of individuals, it is recommended to use teaching methods consistent with the learning style because it would be more effective in this context" (p. 95).

Another study conducted by Fitriani et al. (2020) investigating the correlation between critical thinking skills and academic achievement in Biology through the implementation of problem-based learning-predict observe explain (PBLPOE) learning model, the results concluded that there is a significant relationship between critical thinking and student academic achievement in the field of Biology. The authors have settled on the idea that: "students with good critical thinking skills are trained to think at a high level; therefore, it is more possible for them to obtain higher academic achievement" (p.173). Accordingly, critical thinking makes students more focused and attentive in the classroom in addition to creating an active atmosphere where students engage more and involve themselves in productive activities that lead them to an improved achievement and a great performance. Apparently, the interviewed teachers recognise the importance of critical thinking, yet it is not always easy for them to put in practice their beliefs regarding students 'development of critical thinking as mirrored in the literature.

Thirdly, the findings have also revealed that some teachers believe that critical thinking is important in challenging misconceptions. Critical thinking helps to understand what is conveyed clearly to prevent any misunderstandings based on reasoned judgement. This implies that these teachers are aware of the role that critical thinking plays through reasoning and the skills of analysis and evaluation in confronting misconceptions to arrive at reliable and valid knowledge. It is observed in the literature that many researchers have referred to this inevitable role of critical thinking in challenging falsification and misconceptions especially in this information era. Dellantonio and Pastore (2021) believe that critical thinking works as a remedy for misconceptions. They indicated that: " the discipline that in our view leads people to develop the kind of knowledge that is required for such assessments is critical thinking, understood as a blend of an open-minded attitude, the knowledge of specific thinking … and scientific knowledge of the content that is the object of our reflection" (p.7496). In the same line of thought, Browne and Keeley have embraced

the idea that: "critical thinking encourages us to develop our scientific knowledge and our knowledge of the principles that reasoning is based on, while also promoting an open-minded attitude. These three components combined bolster the self-correcting nature of our thought processes and our ability to ask pertinent questions to challenge existing beliefs" (2013, p. 53). Therefore, it became a requirement for teachers to develop their students' critical thinking for the great role that it plays to confront biases and overcome different misconceptions.

Lastly**,** it is also found that teachers interviewed in this study presume that the importance of critical thinking lies within its capability to solve problems and make decisions. In their belief, critical thinking helps not only in solving problems but in creating ways and alternative choices and suggestions for people at differing contexts. It is noticed in the literature that numerous authors believe that critical thinking is also required to solve social and scientific problems found in everyday life (Abbasi and Izadpanah, 2018). Moreover, Kalonji (2005) advocated that in order for students to be successful in life, they must develop their critical thinking skills which will enable them to work collaboratively, think logically and critically, communicate effectively and more importantly solve problems efficiently in the workplace. According to Heruna et al. (2022), "critical thinking has been widely recognized as one of the most important skills. Someone who has the ability to engage in critical thinking and problem solving is considered to have many benefits because he has the ability to analyse certain situations and make the right decisions for the situation at hand" (p.173). Consequently, the views of the teachers interviewed in this study are aligned to ideas presented in the existing literature about the usefulness of critical thinking in problem solving and decision making.

Overall, it seems that despite the educational differences, the conceptualisations of critical thinking provided by the interviewed teachers are overlapping. The responses provided by these teachers do also reflect their awareness of the importance of critical thinking and the purposes it could be serving at different levels (personally, educationally and socially). Their views also explain their understanding of how critical thinking is important for personal and academic growth as well as for challenging misconceptions and solving problems. It is also noted that educators from the different disciplines and contexts are suggesting that critical thinking should be a requirement in the educational system. They also insist on policy makers to deal with issues involving critical thinking integration into the curriculum as all should work on investing in the formation of graduate critical thinkers.

6.3 The Development of students' critical thinking

The second research question addressed by this study was about the extent to which these teachers believe they support students' critical thinking development at the university level and their approaches and objectives of their teaching. It also demonstrates some methodologies that they integrated within their pedagogical practices. In response to this research question, the second major theme referred to in section 5.3.3 among the findings of the study captured the methodologies used in supporting the development of students' critical thinking from these teachers' perspectives. The theme is imperative for it explains the teachers' approaches and objectives of their teaching, their support of the development of students' critical thinking and it illustrates some methodologies that the teachers integrated within the lesson plan which range from classroom discussions, debates, workshops, brainstorming, problem- solving activities, asking questions and lastly self- assessment. This section will be then dedicated to discussing these findings in relation to existing research in the field.

One of the findings that stands out from the results reported earlier describes that there is still a prevalence of teacher centred approaches to teaching and the predominance of the transmission model in the classroom despite the changing focus of higher education policy since 2007. The findings have shown that teachers' approaches are differing, but most teachers work towards the transmission of knowledge. Their focus is to communicate information and knowledge to students and therefore they only work to supply a designated body of knowledge to their students. These teachers understand teaching as knowledge imparting, and they tend to be dominants in the classroom neglecting the importance of interaction and discussion withing classes. This definition to teaching falls under the transmission paradigm where students are discouraged to be involved in the teaching learning process. It is also noted that most teachers who had a transmission approach led teacher-centred classrooms where they directed their students' learning process. Students' roles were then to receive that knowledge and recall it in exams.

A study by Khan (2019) demarcating the Pakistani context indicated that "given the teacher-centred paradigm that tends to dominate learning in higher education in Pakistan, the development of critical thinking may not be easy for opportunities to question are rare" (p.56); this implies that developing critical thinking can be a difficult process within this approach to teaching. Although there is a paradigm shift from the teacher- centred classrooms to learner-centred ones especially with the introduction of the communicative approach to teaching

within the LMD system in Algeria since almost 2007. But this does not match reality as clearly most classrooms are still teacher-led. In her study about critical thinking in Algerian secondary school EFL Classes, Baghoussi (2021) found that most classrooms are dominated by a teacher centred approach which does not offer opportunities for enhancing critical thinking. This is probably because teachers have found difficulties in the application of the new teaching approach; having problems such as the lack of learning materials and resources, classroom management difficulties due to crowdedness, time constraints and the length of the syllabus which have been described as barriers to the support of the development of students' critical thinking as well.

In contradiction, only few teachers in this study seemed aware of the importance of giving their students quality learning experiences and have led a student- centred approach where they were able to work on prioritising students' needs and experiences in the educational process. This approach advocates Khan (2019) places the emphasis on the learner, with the teacher acting as a guide to help students reach their educational goals. The advantage of this teaching approach is the support of students' autonomy and creativity and the development of their analytical, communicative and evaluative skills. It should be noted here that this is not a disciplinary issue as teachers showing a learner- centred approach come from different disciplines. Additionally, Khan (2019) found that student-centred learning was beneficial in providing opportunities for productive discussion and questioning through the range of activities undertaken. This approach allowed students to take ownership of their learning, develop critical thinking skills and gain a deeper understanding of their domains. Teachers' willingness and desire to adopt such an approach to teaching is due to their awareness of the high importance and the great role that these skills play particularly in preparing students for real life despite any condition that they may encounter.

Regarding teachers' support of the development of their students' critical thinking, it has been revealed from the findings of the data analysed in the previous chapter that there is an agreement between the teachers that the development of students' critical thinking is important within classrooms, yet it is practised to some extent only and this is particularly due to the difficult circumstances and some interfering factors which will be discussed later on in section 6.4. It was observed that some of these teachers truly believe in the importance of developing their students' critical thinking skills, but their focus on such a practice was not very frequent as their teacher- centredness in the classroom discourages any kind of interaction and emphasises only the transmission of a designated body of knowledge. In

addition, some of the teachers admitted the existence of some barriers and challenging conditions that forbid them from doing so. As noticed earlier in the findings chapter, this is probably because teachers are having problems such as the lack of learning materials and resources, classroom management difficulties due to crowdedness, time constraints and the length of the syllabus. It is also worth mentioning that not all of the teachers always support the development of the dispositional aspects of critical thinking as recognised in the conceptualisation section (see section 6.2) that not all teachers consider critical thinking dispositions and thus these teachers tend to use methodologies that link to the idea of critical thinking as a process or a set of skills, but do not always support the development of dispositional aspects of critical thinking. In this essence, teachers asserted their use of a variety of strategies to promote their students' critical thinking realising that several studies indicated that improving students' thinking requires more explicit teaching of critical thinking skills (Bangert-Drowns & Bankert, 1990; Halpern, 1998).

It has been noted as well that the interviewees' answers uncovered different methodologies that they used across their different disciplines to support and promote critical thinking in the classroom. The respondents cited classroom discussions, debates, workshops, brainstorming, problem solving activities, asking questions throughout the lesson and lastly self- assessment. Discussions, questioning, debates and problem solving activities appeared to be favourites for the interviewed teachers when developing students' critical thinking. However, the other methodologies namely brainstorming, workshops and self-assessment were not very often implemented or commented on by the teachers in this regard and henceforth are less preferred. These will be discussed in the following section respectively.

6.3.1 Preferred methodologies for the development of students' critical thinking

The majority of teachers' responses indicated that **classroom discussions** are the most used and preferred methodology by the interviewed teachers to promote students' critical thinking in classrooms. Classroom discussions are teaching approaches in which various forms of dialogue are implemented to target particular learning objectives (Jahng, 2012). According to Sibold (2017) discussion-based pedagogies come in various forms, including online discussion boards, mock trials, problem-based discussions, debates, structured controversy, deliberative discussions, book clubs, and more. These pedagogical approaches encourage active participation and engagement among students, allowing them to exchange ideas, analyse different perspectives, and develop critical thinking skills, yet only if the potential difficulties to the use of classroom discussions could be mitigated by effective

facilitation from the teachers' part. Pederson (1992) asserted that using discussion-based pedagogies assists in the development of critical thinking skills, which are often emphasised as important outcomes in higher education programs. The interviews of the present study indicated that discussions are a useful activity for students to share ideas and viewpoints about different topics, develop students 'critical thinking and enhance their communication skills and their sense of collaboration.

There is a multitude of research studies about the effectiveness of classroom discussions in the development of students' critical thinking. For instance, Tsui (2002) provided valuable insight into how teachers can effectively promote critical thinking in their classrooms, and she stressed out the importance of class discussion as amongst the best classroom approaches to enhance students' critical thinking. Likewise, in his published guide for using discussion-based pedagogy in enhancing critical thinking, Sibold (2017) considered discussion-based pedagogies to be a useful method in developing critical thinking skills and he assured that they are applicable across the disciplines Additionally, Jones (2014) advocated that the integration of classroom discussions can help students to exchange new ideas, confront alternative viewpoints and apply new knowledge to complex problems in collaboration with their peers, and more importantly they can promote improvements in student learning outcomes and performance including the development of critical thinking and communication skills.

Furthermore, Fung et al. (2016) evidenced in their research that work in groups including discussion activities can be beneficial in developing students' critical thinking skills. Thereafter, classroom discussions appear to be a preferred methodology for the development of critical thinking where students develop communicative and analytical skills and engage more throughout the course besides learning to respect others' perspectives. Yet, some of the barriers to be discussed later (see section 6.4) show how the teachers believe they may have limited opportunities to do this.

The findings have also indicated that teachers advocate the use of **debates** for the development of their students' critical thinking. In addition to them being useful for improving students listening and speaking skills, these teachers describe debates as beneficial for presenting and evidencing arguments in trying to convince others of differing perspectives. In this essence, Roy and Macchiette (2005) stated that: "debate as a pedagogical tool, it breathes life into the process of critical thinking as debate requires and develops many of the

same skills inherent in critical thinking" (p. 265). They have also found in their study in the field of marketing that debate on provocative issues can productively encourage critical thinking in clearly obvious ways (Roy and Macchiette, 2005). Moreover, Hall (2011) asserted that debates can help students enhance their critical thinking skills, communication abilities, and self- confidence in a wide range of situations. Additionally, he argued that debating can also enhance problem-solving capabilities. In the same line of thought, Fuad et al. (2016) in their experimental study conducted in a college in Indonesia which intended to examine whether the debate class students' critical thinking skills can be increased concluded that debate classes can improve students' critical thinking skills on four indicators: clarity of information, depth of ideas, breadth viewpoint and precision in inference. Furthermore, based on her study on the use of debates to improve the students´ critical thinking and speaking skills, Iman (2017) asserted that the use of this technique makes a significant improvement in critical thinking and speaking skills and revealed that there is a strong correlation between the debate and the various aspects of critical thinking. This entails that debates are particularly useful in supporting the development of critical thinking from these teachers' viewpoints (5 teachers out of 16). Therefore, debates are one of the most used strategies for the support of critical thinking development that teachers consider being very helpful, interesting and engaging for students.

It was also found that the teachers advocated the usefulness of **problem-solving activities** and methods in the development of critical thinking as problem solving practices are very beneficial to improve students' critical thinking skills" (Utami et al., 2017). The teachers interviewed in the present study describe these activities as practices that expose students to real-life problems where they are required to think critically and suggest solutions or take decisions accordingly. They also clarified the role this kind of activities plays in developing rational thinking, generating plausible solutions, making decisions and more importantly teaching students to be evaluative and selective of these solutions as one of the teachers has declared: "this type of activities does not only teach students to define problems and find solutions to them, but it also truly teaches them to be evaluative and selective of these solutions"(Souad).

Based on several research studies, problem- solving can improve critical thinking skills by comparison of control classes that use learning without Problem Solving (Utami et al., 2017). In the field of nursing practice, Beşer and Kissal (2009) argued that critical thinking and problem solving are intimately related because they both require active involvement and

intellectual agility. A similar study by Moneva et al. (2020) showed that the problem solving attitude is significantly associated to the critical thinking ability of the students. They claimed that: "students who have high level of problem solving attitude will become successful ones someday, because they don't get affected in their problems instead, they solve them right away with their critical thinking" (p. 138). This implies that problem-solving activities have a significant impact on the support of the development of students' critical thinking.

As the problem-based learning is considered by teachers as part of a wide range of problem solving practices; it proved to be influential in the development of students' critical thinking. In this regard, a study by Olivares and Heredia Escorza (2012) revealed that students who are taught using the problem-based learning methodology develop a higher balance between inductive and deductive thinking and henceforth improve their critical thinking skills. Similarly, in their experimental study, Belecina & Ocampo (2018) investigated the effect of using problem situations on the critical thinking of graduate students in solving problems. They have concluded that these problem situations developed students' ability to be more reflective and metacognitive, particularly when they were analysing problems and thus significantly improved their critical thinking assuring that critical thinking and problem solving go hand in hand in the development of successful students.

In addition to considering problem solving activities and methods as a necessity for the development of critical thinking, it is also observed that teachers in the present study state that they should be integrated within the curriculum; one of the teachers stated clearly: "problem solving activities engage students in an ongoing process where they face issues that need higher order skills namely reflection, analysis and evaluation to arrive at satisfactory solutions. That is why these activities must be part of the curriculum".(Selma) This denotes the high importance of such methodology for the development of students' critical thinking. It should be noted here that the interviewees (Selma, Souad and Mustafa) who claimed the importance of critical thinking and the role that it plays in solving problems and making decisions are the same teachers who declared their use of the problem solving activities in the development of their students' critical thinking. These teachers understand the importance of critical thinking in problem solving and decision making and are actively working to cultivate this skill through their teaching methods.

Additionally, it is noted that these teachers very often relate problem- solving with decision making. Olivares et al., (2013) pointed out that it is a difficult task to separate two strategies that help the student to think critically, namely, that of taking decisions and solving problems. They believe that solving a problem conveys that a selection must be made; this in

turn can help the student become more selective when it comes to their decisions, thus aiding them in their critical thinking process. Henceforth, the study findings indicate how the problem- solving activities help to think critically and also suggest that such activities should be integrated within the curriculum aiming at improving students' critical thinking skills.

The results of the data analysed in the current study have also revealed that teachers believe that **asking questions** in classroom encourages critical thinking development as it helps much in resolving confusion and finding satisfying logical answers. In this essence, Paul and Elder (2006) advocated that among the different pedagogies and methods used in previous studies, Socratic questioning had shown a robust relationship with the development of critical thinking skill. Previous research has also indicated that asking questions is among the useful techniques that develop critical thinking (Duron et al., 2006). By asking thought-provoking questions, teachers can create an environment where students are encouraged to think critically and develop their own ideas, analyse and evaluate them. As they have emphasised: "questions can be used to stimulate interaction between teacher and learner and to challenge the learner to defend his or her position, i.e., to think critically" (Duron et al., 2006, p. 162).

In her study, King (1995) also discussed the importance of using questioning to teach critical thinking. She argued that effective questioning can help students develop their critical thinking skills by encouraging them to think deeply and reflect on their own ideas. She stated that: "simply put, good thinkers are good questioners. Whatever they see, hear, read, or experience, they are constantly analysing it, puzzling over its significance, searching for explanations, and speculating about relations between that experience and what they already know" (1995, p.13). She evidenced that through her program of research on inquiry-based learning (King, 1989, 1990) which emphasised that thought-provoking or critical-thinking questions stimulate high-level cognitive processes, such as analysis of ideas, comparison and contrast, inference, prediction, evaluation, and so on.

Furthermore, a study conducted by Lin et al., (2019) which focused on designing critical thinking exercises for elementary school students through Socratic questioning concluded that the designed critical thinking learning sessions were effective in enhancing students 'critical thinking. They have also indicated that Socratic questioning approach had provided students with a positive environment encouraging the enhancement of their critical thinking skill. Therefore, there is an agreement on the role that the questioning technique plays in the support and development of students 'critical thinking. It is essential to acknowledge that whilst the teachers in this study claimed that asking questions is important, yet further research is needed

to know more about this technique as to how it should be used effectively, what questions are appropriate and how they should be asked.

It should also be noted from the findings that the teachers have pointed out to the idea that for this strategy to be effective, teachers should be trained well to be able to formulate such thought- provoking questions as one of the interviewed teachers explained: "although questioning is an essential element in critical thinking, questions should be posed in a supportive atmosphere of learning, otherwise they will turn to a negative learning opportunity"(Jamila). In this regard, Benzanilla et al. (2019) advocated that teachers should be trained in the formulation of complex questions as this is a difficult task for the teacher, and it implies their commitment. Moreover, King (1995) suggested that teachers should use open-ended questions, provide wait time for students to think and respond, and ask follow-up questions to further explore student responses. She also emphasised the importance of providing feedback to students to help them understand their thinking processes and improve their critical thinking skills. Therefore, teachers 'views consider questioning as a truly useful tool in the development of critical thinking, but it should be used carefully to fulfil the aim of developing critical thinking and consequently create a positive and fruitful learning experience. Hence, further research could be useful to know more about how teachers in the Algerian context use questioning and the other approaches discussed above in their practice to really understand the potential value of the approaches they think might be useful and effective in developing critical thinking.

6.3.2 Less preferred methodologies for the development of students' critical thinking

The findings of this study have also reported three other methodologies namely brainstorming, workshops and self-assessment. These methodologies are revealed by the teachers to be useful for the development of students' critical thinking, but they are less preferred and not widely practiced for the purpose of developing critical thinking which is probably due to the presence of other implemented methodologies such as the ones discussed earlier (classroom discussions, debates…).

First, for workshops only three teachers (Riad, Souad and Soumia) who considered their use for the support of the development of their students' critical thinking. These teachers advocated the usefulness of workshops for they prompt developing skills such as argumentation, communication and evaluation of knowledge in addition to problem solving skills and in turn lead to the development of critical thinking. In their research about the methodologies for teaching-learning critical thinking in higher education Benzanilla, et al.

(2019) identified workshops among other methodologies as methodologies that are used by teachers, but not as frequently as other commonly used methodologies. Although, workshops are used by teachers in the development of students' critical thinking, there is little research about their effectiveness in this regard; therefore, more research is needed to examine their value for the development of critical thinking and to see how teachers actually use them.

Second, the research findings denoted the usage of brainstorming as a strategy to enhance students' critical thinking by few teachers. Although only two teachers who considered the use of brainstorming as a teaching methodology for the support of their students' critical thinking development, but they emphasised its effectiveness. The process of brainstorming does involve skills of reflection, analysis, evaluation, problem- solving and creativity and thus it is highly related and influential on the development of critical thinking. It is revealed in the literature that brainstorming strategy is one of the most significant methodologies which incite critical thinking and problem- solving skills across different disciplines as it involves the use of the brain to develop creative solutions to problems (Jarwan, 2005 as cited in Almutairi, 2015).

In their experimental study that explored whether applying brainstorming strategy brings about significant improvements in English language learners' speaking proficiency and critical thinking skills, Khodadady et al., (2011) have concluded that employing brainstorming strategy does improve learners' critical thinking skill in general and their ability to reach deductions in particular and thus help students to express themselves in the foreign language without being afraid of facing criticism. Brainstorming appeared to be helpful for developing students 'approaches of thinking in the search for the most convenient solutions, yet in the current study it is less of a popular activity for teachers to use in the development of their students' critical thinking. Thus, we need to know more about how it is used in this context to see if it is appropriate and actually does what the teachers think it does.

Third**,** the findings also revealed that teachers (Amina, Dalia and Jalal) made use of student self- assessment as a methodology to enhance students' critical thinking as it appeared to have a significant impact on critical thinking development. Teachers interviewed in this study maintained that this type of activity allows students to reflect upon their strengths or weaknesses and improve their skills of evaluation and analysis in addition to learning to be autonomous, independent and responsible for their own education. Duron et al., (2006)

advocated that creating opportunities for self-assessment and peer review is important in the development of students' critical thinking.

A study by Siles and Solano (2016) also confirmed the importance of self- assessment as part of reflective learning to promote critical thinking. They said: "in general terms, student participation in the process of assessing their own learning, and in particular their achievements and results, contributes to full development of reflection on learning and facilitates the development of critical thinking" (Siles & Solano, 2016, p.136). Additionally, Dienichieva et al. (2021) considered self- assessment as one of the effective methods of developing critical thinking skills in education as they have found that the development of critical thinking was attained through self-assessment and reflection. Consequently, self-assessment is important to critical thinking as advocates the foundation for critical thinking (2019) where each step in the process of thinking critically is tied to a self-reflexive step of self-assessment. Accordingly, self-assessment is considered as an advantageous methodology for the development of critical thinking. Yet, in the current context of our study, this approach is less popular. That is why more research should consider the reasons behind.

To sum up, there are various methodologies that can be used to develop students' critical thinking skills from the teachers' perspective. Although differing in the extent of use and the limits of what we know about the effectiveness of these methodologies in our context, these teachers used classroom discussions, debates, workshops, brainstorming, problem- solving activities, asking questions and lastly self- assessment. In the present study, these methodologies are divided into two categories those which are more popular (classroom discussions, debates, problem-solving activities and asking questions) and others which are less popular in use (workshops, brainstorming and self-assessment), yet each unique approach contributes to developing critical thinking. By using these methodologies, educators support students to develop the ability to analyse information critically, evaluate arguments effectively, and make informed decisions. Ultimately, developing critical thinking skills is crucial for students' success in academic and professional settings and their ability to explore complex issues in today's world.

6.4 Barriers to the development of students' critical thinking

Findings from the present study identified important insights from university teachers regarding their views of the barriers impeding their students' critical thinking development. These findings revealed five major barriers as the teachers' uncovered obstacles related to

contextual realities, student related barriers, teachers' related barriers, policy related barriers and lastly but not least cultural hindrances. The teachers believe that these hindrances are the reason behind the moderate extent of teachers' support of students' critical thinking development. These findings will be discussed in this section thoroughly.

6.4.1 Contextual barriers to students' critical thinking development

The findings reported that the classroom reality adversely influenced teachers' support of the development of their students' critical thinking. These teachers offered an important perspective concerning the impact of the atmosphere and the reality of the learning/ teaching process on the support of critical thinking development. In this regard, a number of teachers (7 out of 16) interviewed in this study explained time constraints, length of syllabus and crowdedness of classrooms as hindrances to their support of the development of students' critical thinking. These will be discussed in this section to understand how and why they are impeding students' critical thinking development.

The teachers explained their concern regarding the long syllabus that they need to cover which in their belief created a problem for them to focus on developing students' critical thinking. They indicated that it does not encourage teachers to invest some time in embedding activities for the development of students' critical thinking within the syllabus as they are required to cover an overwhelming amount of information and topics. These activities are a bit time- consuming, so some time should be allocated to design and practice them. The teachers described this matter as a challenging and troubling situation.

In consistency with the literature, (Shell, 2001; Aliakbari & Sadeghdaghighi, 2013) reported that insufficient time to learn new teaching methods, inadequate time of classes besides the lack of time for preparing and planning critical thinking activities were regarded as a major barrier for the development of critical thinking. In the same line of thought, Reynolds (2016) found that teachers prioritised covering the curriculum content over the teaching of critical thinking skills as believed it is required for assessment. The teachers also argued that they were unable to plan critical thinking activities in the classroom due to time constraints and extracurricular work.

Moreover, the teachers identified crowded classrooms as their barrier to supporting the development of critical thinking as these classrooms prevent the teacher from controlling and engaging all students in the educational process. These barriers among others are reported in a study conducted by Shell (2001) who concluded that there are three major obstacles that

inhibit their implementation of strategies to teaching critical thinking; among them is inadequate time and the need to cover content and dispense information.

Similarly, Laabidi (2019) concluded in his study that teachers pointed out to their concern about the workload and the lack of time to prepare activities for developing students' critical thinking. They listed time constraints and the need to cover all the curriculum content as a great hindrance to their teaching of critical thinking in classrooms. Additionally, teachers also pointed out that this is a serious problem that policy makers need to pay attention to as supported by the many studies in the field. They have also declared that these contextual barriers affect not only the development of students' critical thinking but also the whole learning experience and thus should not be overlooked.

The findings of this study are supported by several works in the literature and from different contexts of western and non-western thoughts (shell, 2001; Aliakbari & Sadeghdaghighi, 2013; Reynolds, 2016; Laabidi, 2019) where time constraints, the syllabus load and crowdedness of classrooms are interrelated impediments for the development of students' critical thinking. These contextual obstacles negatively impact the teaching and learning process in general and create barriers to the development of critical thinking and many other skills in particular. These teachers are asking policy makers to alleviate that burden a little bit for a better education that supports the development of students' critical thinking. This implies that teachers are suggesting that the syllabus need to be re-evaluated and the teaching strategies of critical thinking should be integrated within the curriculum being allocated sufficient time before their planning and during their practice.

6.4.2 Student related barriers to the development of students' critical thinking development

The findings from the data analysed in this study have exposed some students' related factors which have a negative influence on the development of their critical thinking. From these teachers' viewpoint, these factors are egocentrism, shyness, indifference, the lack of discipline related knowledge and the lack of adequate knowledge about critical thinking itself. The findings of the current study are consistent with some of the existing literature (Shell, 2001; Ozkan-Akan, 2003 and Aliakbari & Sadeghdaghighi, 2013); these scholars believe that teachers have the impression that students prefer activities with simple factual questions and answers, and they are obstinate, shy or even indifferent to develop their critical thinking. Additionally, the teachers believe that some of their students seem oblivious even of basic knowledge of their domains which constrains their critical thinking development in addition to them being unaware of what critical thinking in itself is and how it could be developed

thereafter. This is considered problematic for teachers as they suppose that it is really important for students to acquire the adequate knowledge of both the critical thinking skills and the topic of interest besides the disposition to do so since all these elements work together to make a critical thought. These impediments will be discussed in this section for it is important to have a clear idea of how these factors inhibit critical thinking development and how to tackle them from the teachers' perspectives.

The findings of the present study evoked that **egocentrism** can be a major obstacle in developing students' critical thinking skills as it prevents individuals from considering different perspectives and engaging in meaningful dialogue with others. The responding teachers in this study described their students as being egocentric and obstinate to accepting or understanding any perspective other than their own. This feature forbids students from developing their critical thinking as the latter needs an open 'mind and a respect for other' views. The teachers explained that students' egocentrism inhibits their critical thinking development because it can lead to a lack of objectivity and self-reflection and an inability to consider alternative points of view which are features deemed to be necessary for developing critical thinking skills.

Mouhammed clarified that: "some students are obstinate; they do not take others ' perspectives into account or even try to consider and evaluate them… it is difficult for them to tolerate alternatives and they even refuse constructive feedback and criticism ". In this regard, Aliakbari and Sadeghdaghighi (2013) settled on the conclusion that the highest barrier to the development of students' critical thinking was related to students' characteristics. This implies that the students were the constraining aspect in enhancing their critical thinking skills due to factors such as lack of motivation, desire for good grades, and reluctance to engage in active learning. Likewise, Yusuf and shah (2018) also found that the major barrier in teaching critical thinking in ESL classroom in their quantitative study was student-related factor.

Moreover, **shyness** is another factor that inhibits students' development of critical thinking. One of the interviewed teachers think that: " it is hard for shy students to develop critical thinking, as shyness prevents them from communicating their views or trying to defend and discuss them. Shyness makes students unconfident, discouraged and unwilling to think out of the box which creates a huge obstacle for both their self- development and also for their critical thinking development"(Mustafa). The literature does not always mention

shyness as an inhibiting element that halts students from developing their critical thinking. Therefore, researchers need to spotlight this issue and explore how could this emotional factor impede the development of students' critical thinking particularly in this context.

In addition to egocentrism and shyness, some teachers in the present study believe that **indifference** is another hindering element in the development of critical thinking. Souleh (2017) described Algerian students as lacking commitment, she argued that: " because the higher education is a free system, students (many of them) will not show commitment"(p.40). One of the interviewed teachers in this study believed that: "since critical thinking is a cognitive process that demands higher order thinking skills of reflection and analysis, some students tend to be very lazy and indifferent to developing their critical thinking although they are aware of its importance. These students are careless even for preparing their lessons or doing their activities and thus they developed a habit of an uninterest in such a skill" (Dalia).

Similarly, Ojewole and Thompson (2014) stated indifference and disengagement with critical thinking among Nigerian students who do not prefer involving themselves in constructive activities. This implies that students are driven by the desire to get grades only and are themselves constraining their critical thinking development. Benzanilla et al. (2021) assured that amongst the main difficulties to teaching critical thinking at university is the lack of interest in the subject on the part of the students. Therefore, policy makers and educators are expected to investigate strategies to address student reluctance to engage in active learning and its causes, which is necessary for the development of students' critical thinking skills. Hence, from the teachers' perspective, it is important to consider the psychological aspects of students when attempting to foster students' critical thinking.

Furthermore, some teachers described their students as lacking essential background knowledge and information needed to perform critical thinking and thus fail to develop it. This indicates that if students do not have the necessary knowledge and understanding of the subject matter, they will not be able to think critically and analyse the subject. Without this background knowledge, they are unable to make connections between concepts, draw conclusions, or evaluate information which leads to a lack of critical thinking. Bailin et al. advocated that "background knowledge in a particular area is a precondition for critical thinking to take place" (1999a, p. 271). This implies that students will not be able to think critically unless they acquire the prerequisite disciplinary knowledge. In his study, Kanik (2010) concluded that the participating teachers claimed that their students are lacking

prerequisite knowledge and abilities in mathematics, and this resulted in low participation and dissatisfactory performance in activities requiring critical thinking. Therefore, adequate background knowledge of a subject is needed in the critical thinking process even though one possesses the skills of critical thinking.

Additionally, the findings also revealed that some teachers believe that some students are unaware of what critical thinking is or they only have a vague understanding of it and thus resulted in a failure in its development; teachers therefore should make critical thinking clearer for their students to understand and practise it. Thus, knowledge of the critical thinking skills is also important for it to be applied and then developed in classrooms and it is the teachers' role to clarify this concept to their students. In this regard, Amin and Adiansyah reported that "as a result of the lack of knowledge of the subject matter and the critical thinking skills, the variety of the learning models and strategies implemented in classrooms cannot successfully improve the students' critical thinking"(2018, p.4). The study results also correlate with studies of Khalid et al. (2021), Alwadai (2014) Allamnakhrah (2013), and Bataineh and Alazzi (2009) which recognised that students background knowledge and knowledge of critical thinking skills as one of the hindering aspects to critical thinking practice and development. Yet, as Lai (2011) supposed, "background knowledge is a necessary but not a sufficient condition for enabling critical thought within a given subject" (p. 2). Ultimately, for critical thinking to be practiced and developed, it is important for both teachers and students to be aware of what critical thinking entails and what skills are involved in the process besides having the prerequisite knowledge of the subject matter.

6.4.3 Teacher related barriers to the development of students' critical thinking

In the present study, some teachers proclaimed that they are themselves responsible for creating barriers to the development of their students' critical thinking. Among these barriers are teachers' dominant roles in the classroom and the type of assessment they implement. These barriers will be discussed in this section for it is important to clarify what inhibits students' development of critical thinking from the teachers' part who also suggested some solutions for these issues thereafter to change the situation.

In the current study, although it was revealed that teachers use a variety of approaches and methodologies for the development of their students' critical thinking as discussed in section 6.3. Yet, some teachers advocate that their support of students' development of critical thinking is very limited due to the methods of teaching implemented within classrooms which

are hindering the development of critical thinking process. Kettler (2014) stated that teaching methods have a considerable impact on critical thinking skills. Similarly, Niu et al., (2013) argued that the effectiveness of critical thinking is influenced by instructional aspects such as critical thinking teaching methods. The teachers in the present study admitted their use of teaching methods that do not encourage students' development of critical thinking such as their tendency to teach in a lecturing mode. In this regard, Allamnakhrah (2013) identified the dominant method of instruction which focuses on lecturing, rote learning, and memorisation as factors inhibiting the support of students' critical thinking development within classrooms. It is also advocated that students' less developing critical thinking skills is a result of the traditional learning approaches which cannot engage students actively in classroom activities (DeWaelsche, 2015).

Another study (Khalid et al., 2021) in the Bahraini context identified teachers' teaching methods as a hindrance to the implementation of critical thinking as the participants believed that the major obstacle is that teachers are constantly under pressure to complete the curriculum, and therefore they adopt teaching strategies that will enable them to achieve that objective to the detriment of integrating the development of critical thinking skills in the teaching methods. This is evident as well in a study conducted by Amin & Adiansyah (2018) who pointed out that the teachers are required to be careful and more selective in implementing learning models or strategies suitable for learners 'need to promote their 21st century skills, including critical thinking skills. They added that in order to improve students' critical thinking skills, it is necessary to implement an innovative learning model or strategy on the condition of training teachers to be successful in implementing this model or a variation of strategies in the classroom.

Moreover, it should also be noted that most teachers in this study confessed that they lead a teacher- centred classroom. Riad stated: " Me and some of my colleagues tend to shift to the lecturing mode and deliver lectures that are non- interactive and discussion free; it is the best method to cover as much course content in the shortest time available" Alwadai (2014) defined the lecturing method of teaching as a major impediment to the development of students 'critical thinking skills. This correlates with the findings of Amin & Corebima, (2016) who advocated that teacher-centred learning will result in inhibiting the development of students' critical thinking skills. This implies that although they are aware of the importance of critical thinking and recognise the need to integrate it within the curriculum, it is still hard for these teachers to make it an educational priority that is practised within

classrooms. Therefore, creating a learning environment which allows students to be independent can accelerate the students' cognitive development (Zumbrunn et al., 2011).

It is also found that teachers in this study admitted their inclination to the use of some types of assessment that supports rote memorisation which in turn prevents both exercising and developing students' critical thinking skills. In this essence, one of the teachers interviewed in the present study described this situation as "most of the time, we rely on assessment types that only requires information retention; this type of assessment triggers passive recapitulation of theoretical input only and does not serve critical thinking development" (Hanan). In accordance with existing literature, Bataineh and Alazzi (2009) also noted that the educational system focuses heavily on preparing students for formal testing that does not require critical thinking. Consequently, students channel all their efforts toward succeeding in formal tests that rely on facts and recall. Additionally, Heruna tanty et al. (2022) revealed in their study in the Indonesian context that there are many factors that cause the low critical thinking and problem solving abilities of Indonesian students. "Based on a survey conducted in several schools, it can be concluded that students only learn to memorise concepts and theories and get assessed for them. The activity of memorising concepts and theories cannot stimulate students 'ability to critical thinking and problem solving" (p.174).

Furthermore, a study by Baghoussi (2021) about critical thinking in Algerian secondary school EFL classes showed that English teachers partially respect the syllabus designers' recommendations. Besides, the teachers' methods, classroom practices, and assessment approaches are mainly based on direct instruction and language content acquisition rather than on reflective and problem-solving learning; therefore, they are not conducive to implementing and developing learners' critical thinking. The conclusion drawn from the findings of the current research is that the assessment system should be changed to focus more on critical thinking and less on memorising content. Due to the fact that the curriculum is still content based where students are only required to recall information to get good marks, the situation should not be overlooked for its significant importance in the development of students' critical thinking within the Algerian higher education context.

6.4.4 Policy related barriers to the development of students' critical thinking

The teachers interviewed in the current study have reported some policy related barriers that they believe are major impediments to students' development of critical thinking. These teachers believe that the Bachelor, Master Doctorate system (BMD) that the Algerian higher

education is adopting does not support the development of students' critical thinking realistically. Miliani (2012) has explained that the BMD model was introduced in Algeria in 2004 and it is designed to improve the quality of higher education by providing students with more opportunities for interdisciplinary study, research, and professional development besides promoting their employability by providing them with the skills necessary for success in their chosen field. Yet, the findings presented in the previous chapter (see chapter5) captured teachers' concerns about the system and instances where teachers find themselves unable to prioritise developing students' critical thinking due to obstacles created by the system itself. These obstacles range from the lack of resources, the lack of teachers' training programs, the focus on quantity over the quality of education and finally the failure to bridge theory and practice. These will be discussed hereafter thoroughly.

First, it was reported in the findings that the teachers believed that the BMD system has not offered suitable conditions for the teaching and learning process that is why it is incapable to support the development of students' critical thinking. The teachers had such claims given the current state of university lacking resources and the insufficient means; therefore, it is not feasible to reach the desired outcome that is of the development of students' critical thinking. Mami (2013) advocated that educators were still relying on traditional teaching methods due to the lack of resources available. In this essence, some teachers are asking the system to provide them with the necessary resources to help them develop their students' critical thinking skills. This could include access to online courses, webinars, and other forms of professional development.

Additionally, the system should provide teachers with access to research-based materials and facilities that can help them integrate critical thinking into their lesson plans. Moreover, Ouslimani and Aboubou (2021) concluded in their study that teachers found that their teaching/learning environment was not conducive to integrating critical thinking into their classes. They felt that in order for students to develop critical thinking skills, certain conditions had to be met, such as time allocation, sufficient equipment, program content, and language level. Thereafter, the BMD system has been reported by the teachers to be ineffective in creating an encouraging atmosphere for students and teachers to work towards the development of students' critical thinking due to the various hindrances uncovered above. This is because these hindrances limit the amount of time available for teachers to focus on teaching critical thinking skills and for students to practice them.

Second, the findings of the present study revealed that among the factors that teachers perceive as a barrier to their support and development of students' critical thinking is their lack of training regarding critical thinking integration within the curriculum. This denotes that teachers' engagement with critical thinking in classrooms was not stressed out in teacher education and training programs within the Algerian context. The teachers claimed that the BMD system is not giving any importance to the training of teachers who would work on enhancing students' critical thinking skills. In their belief, the system did not invest neither the resources nor the time in programs that prepare teachers for their integration and practice of critical thinking within their disciplines. This finding is in line with Ozkan-Akan's (2003) and Reynolds' (2016) results. The researcher (Reynolds, 2016) clarified in his study that teachers believed that critical thinking skills are deemed necessary to be taught in classrooms, but teachers were ill-prepared to integrate or teach this skill.

Similarly, Schendel (2016) indicated in her study that: "without sustained support for faculty development, it is likely that universities in Rwanda, else elsewhere in Africa, and beyond will continue to struggle to implement the pedagogical changes necessary to foster critical thinking skills in their student populations. Institution and the governments and agencies that support them must therefore acknowledge that faculty training and support is a crucial priority for international higher education reform"(p.567). Mahmoud is one of the teachers who admitted that he and many of his other colleagues have not had a chance of a training where critical thinking was the framework. He said: "we are honestly not prepared to effectively instil critical thinking and embed it within the curriculum and particularly in our disciplines; we received no formal training that considered critical thinking; I myself am doing it based on some of my research only as I see it important for students to be developed". He has also asserted that: " a training program is absolutely needed for teachers to focus on embedding critical thinking in their courses. The system should consider that seriously to achieve this prominent objective". In their study about Algerian teachers' perceptions of critical thinking and their impact on language teaching Ouslimani and Aboubou (2021) argued that a targeted professional development concerning critical thinking is required to assist educators to develop students' critical thinking successfully.

In order for students to develop their critical thinking skills, it is essential that instructors have a comprehensive knowledge of the fundamentals of critical thinking and that universities provide support in helping lecturers acquire this knowledge (Paul & Elder, 2019). Thus, critical thinking in these teachers' belief should be incorporated in training programs and

henceforth be a priority in teacher education so that it could be applied and developed in classrooms. Cottrell (2017) added in this regard that specialised training to properly incorporate critical thinking is required within their programme and teaching methods. Consequently, it is essential for higher education institutions to help lecturers learn how to engage in teaching that develops critical thinking skills and to provide them sufficient time to do so (Van Erp, 2008). From the students' perspective, Eze et al. (2022) found that: " lecturers are regarded by students as the greatest impediment to critical thinking development. This is because most lecturers, as described by the students, lack a solid foundation in critical thinking and hence are unable to transfer their expertise to their students" (p.361). Thus, in response to the need for students to develop critical thinking skills, teachers are advocating for the implementation of training programs designed particularly to help them teach these skills. These programs would be focused on helping teachers understand how to practice and promote students' critical thinking.

Third, it is reported by teachers in this study that the LMD system' s priority is quantity where the number of graduating students is emphasised over the quality of their learning experiences. The growing number of graduates has caused a decrease in the quality of education due to a lack of trust in the university's ability to bring about meaningful change both socially and economically (Andersson and Djeflat, 2013, p.177). The system as advocates one of the interviewed teachers is " designed to have more graduates by making tertiary education accessible to many groups of students, but it neglected improving the quality of the learning and teaching experience and the development of students themselves either on their professional or academic level". In doing so, the LMD system has failed, to develop students' critical thinking as the latter may be set as an educational objective but that is only theoretical; in reality not at all. Therefore, the findings revealed that the LMD system's main focus is to increase the number of graduates and maximise students' chances of success rather than their personal, professional or even academic development and henceforth prioritise quantity over quality.

Lastly, a small number of teachers declared that despite the fact that the development of students' critical thinking is one of the LMD system's prominent goals, still many students are found to lack critical thinking. In this regard, Miliani explained that: " success in this area was limited because the reforms were merely structural, with little focus on pedagogical issues" (2012, p.219). This means that the reforms brought with the LMD system embraces the development of students' critical thinking at the theoretical level only. One of the teachers

provided evidence to support his assertion by citing the ministry's guide on the LMD system which emphasises the importance of fostering students' critical thinking and curiosity, as well as helping them become independent, autonomous and successful. Yet, he has also confirmed that this is not realised in actual practice. Consistently, Benouar believed that: "the educational programs offered in the higher education institutions are mostly theoretical, creating a trend of lack of harmony between their content and objectives, as well as between the skills taught to students and the needs of the society" (2013, p.366). It is important to unveil the reality behind the policies made aiming at the development of students' critical thinking and investigate how they are practiced in classroom.

6.4.5 Cultural barriers to students' critical thinking development

It was discussed in the findings section (See section 5.4.5) that only one of the interviewees stated a cultural barrier to the development of students' critical thinking which explains how the social norms of the Algerian society prevent thinking critically; the teacher advocated that: "one of the major barriers in my belief is that students often rely on the accepted norms and values of society when making decisions or solving problems, rather than considering alternative perspectives or questioning the ideas presented to them" (Razika). The teacher explained how the reliance on the social norms and traditions can hinder critical thinking as Ricci and Su (2013) claimed: "thought processes and decision-making abilities are often narrowed by cultural background or heritage" (p.48). The reliance on the social norms and values could limit the scope of students' thinking as they are only considering what their society has instructed them to do or what has already been done in past situations. This can lead to a lack of creativity and innovation in problem-solving. It can also prevent individuals from questioning the status quo or challenging existing beliefs and practices which in turn can result in a lack of progress and improvement within society. It should be noted that although Islamic culture influencing the Algerian society is based on the Quran and the teachings of the prophet Muhammed (PBUH) which ideally encourage critical thinking (Malik, 2017), yet cultural stimuli may affect thinking styles and impact personal thinking preferences. They may also influence judgment and restrain the unbiased fashion that is sought in most critical thinking strategies (Ricci & Su, 2013).

In a study by Akhter (2019) that aimed to identify which and how cultural factors impact the development of critical thinking skills among Bangladeshi L2 learners. The data showed that most learners struggle to go beyond lower order thinking skills due to their inability to think critically, which is not being nurtured properly because of some cultural factors that are

hindering the development of Bangladeshi L2 learners' critical thinking skills. The researcher's findings suggest that most students prioritise social beliefs over their own when making decisions and thinking critically. Additionally, the students' tendency to rely on authority figures hinders their ability to think critically. The society in which they live discourage critical inquiry and views it as disrespectful and untrustworthy. As a result, many students avoid engaging in argumentation and instead seek reconciliation. They also refrain from challenging societal norms because doing so is often viewed negatively by others. Furthermore, the researcher revealed that the teachers were in agreement about cultural biases playing a significant role in creating challenges for their students' critical thinking development. They also identified various other factors that contribute to this issue, such as financial autonomy, societal stability, religious beliefs, amenities available within their social environment, and the educational background of their family. All of these elements have a profound influence on shaping how students think and perceive the world around them (Akhter, 2019). Based on the current research interviewees' viewpoints, reliance on social norms can lead students to accept ideas without questioning them or considering alternative perspectives. It can also lead people to ignore evidence and facts that contradict their beliefs and assumptions although new perspectives might be more effective and reliable. Overall, and in line with the literature, this cultural barrier hinders critical thinking by limiting one's ability to think independently and critically evaluate information and ideas. Yet, in the current context of our research, only one teacher advocated such barrier to critical thinking development; this could have different indications that further research would be needed to explore such obstacle to the development of students' critical thinking in the Algerian higher education context.

Additionally, it is also worth noting that the different barriers described earlier are interrelated and they all interfere in creating obstacles for the development of students' critical thinking. Thus, they should be tackled altogether in order to boost the position of critical thinking within the curriculum. In this regard, Onosko (1991) argued that: "though there is no logical or necessary sequence of attack when confronting these barriers, due to their interactive nature, department, school, and system-wide efforts to improve students' higher-order thinking are more likely to experience success if all barriers are tackled" (p.3).

In short, important findings of this study revealed that there are so many hindrances to the development of critical thinking among students from the teachers' perspectives. Teachers listed context related barriers, student related hindering factors, more teacher- related barriers,

policy related barriers and the cultural impediments as well. These barriers do not only hinder the development of students' critical thinking but even its practice in different contexts and situations. Teachers are aware of these barriers and admit their failure in developing their students' critical thinking. However, and despite these obstacles these teachers advocated that they are trying their best to find ways to clarify to their students what critical thinking is, how it should be applied and in what ways it could be developed because they very well understand how essential critical thinking is and what role it plays in the development of the society as a whole. Still, they are pleading for more reforms in the system to be able to integrate and develop students' critical thinking. Eventually, there is an agreement about the significance of critical thinking and how important it is to not overlook or ignore it; however, it should be taught and developed for students' professional development and empowerment.

6.5 Critical thinking conceptualisation, development and barriers

After presenting and discussing the themes generated in the data analysis, I will briefly explain how the themes and sub-themes are linked to each other although they indicate distinctive aspects of critical thinking in the Algerian context. The first theme captured the teachers' conceptualisation of critical thinking and also reports how important critical thinking is at the personal, educational :and social levels. The theme has also described the skills plus dispositions view of critical thinking which appeared significant for the development of students' critical thinking. The neglect of the dispositional aspect of critical thinking is highlighted in the third theme where it explained some student related barriers created in the absence of the willingness and disposition of students to be critical thinkers.

Moreover, the second theme has described the restrained extent to which teachers support the development of students' critical thinking and the methodologies preferred in doing so. The extent to which critical thinking is promoted in classrooms is highly related to the barriers indicated by the teachers in the third theme and that is why teachers suggested in the third theme to tackle these barriers altogether in working towards the development of students ' critical thinking. What could be noted here as well is the link between the teachers' belief of the importance of critical thinking in problem solving and decision making and their inclination to implement methodologies that support this purpose.

The third theme described so many hindrances to the development of students' critical thinking which are clearly interrelated or overlapping. For instance, the predominance of teacher centred approaches to teaching and the transmission model dominating in the

classroom despite the changing focus of Algerian higher education policy since 2007 is one of the barriers that are highly related to the failure of the system to provide the needed resources and to create a suitable environment for the teaching and learning process and for the integration of critical thinking in the lesson plan as well. Henceforth, while there is an understanding of the importance of developing students' critical thinking within Algerian universities, there are several challenges that need to be addressed before it can be effectively developed among students. Certainly, critical thinking is a complex process that involves many different aspects and requires a holistic approach to be fully understood. The overlaps between the themes indicate the interconnectedness of these aspects and how they could work together to support the development of students' critical thinking skills and dispositions. Indeed, a clear definition of critical thinking from the teachers' part with an acknowledgement of critical thinking importance and a practical awareness of the various challenges interfering would be beneficial for the development of students' critical thinking.

6.6 Summary of the chapter

This chapter discussed the themes identified from the findings of the data analysis of the semi- structured interviews. The three themes captured the interviewees' conceptualisation of critical thinking besides views about its development and hindrances at the university level within the Algerian context. The chapter presented the Algerian university teachers' conceptualisation of critical thinking and their understanding of the nature of critical thinking which appeared to be overlapping and generally relevant to the variety of the existing definitions found in western and non-western literature. Additionally, as observed earlier, teachers also focused more on the skills' dimension of critical thinking and less on the dispositions of critical thinkers. Indeed, this provides educators, researchers and policy makers with a clear picture of the status of critical thinking from the teachers' points of view in the Algerian higher education context. This in turn signifies that teachers need to further broaden their understanding of such a complex concept with the aim to support students' critical thinking development drawing on different perspectives from the globe.

Moreover, the chapter involved teachers' perspectives considering the high importance of critical thinking at different levels and included some suggestions of educators from the different disciplines to integrate critical thinking within the educational system besides insisting on policy makers to deal with issues inhibiting critical thinking development. Furthermore, the chapter has also highlighted some limitations that were related to the teacher's dominance in the classroom and other barriers related to students' psychology,

classroom reality and the lack of knowledge of critical thinking in itself. The views of teachers about the BMD system' s role in the support of students' development of critical thinking were also discussed in this chapter where teachers complained about the system and instances where they found themselves incapable of supporting the development of students' critical thinking due to obstacles created by the system itself. Also, an explanation of how some of the themes are linked to each other was included. This explanation implies that despite having some distinctive aspects of critical thinking, the interconnectedness suggests that these elements could work together to support the development of students' critical thinking skills. Overall, the themes identified from the present study could inform academics and policy makers for future action aimed at the integration and development of students' critical thinking in the current study context.

Chapter Seven: Conclusions

7.1 Introduction

This chapter brings together a summary of the present study. It will be dedicated to the concluding thoughts considering the investigation of teachers' conceptualisation and development of students' critical thinking within the Algerian higher education context. The chapter begins by summarising the findings in relation to the research questions and their relevance to critical thinking wider context. The second part explains the main conceptual, empirical and practical contributions and significance of the research . It then outlines some of the limitations of the study followed by a number of directions for future research and a discussion of its pedagogical implications. Finally, a general conclusion is drawn.

7.2 Summary of key findings in relation to the research questions

In this study, I sought to explore teachers' conceptualisation and development of students' critical thinking within the Algerian higher education context. My study aims at answering the two research questions in an effort to identify how teachers within the Algerian higher education context conceptualise critical thinking; identify any differences in the way Algerian university teachers conceptualise critical thinking and find how these teachers believe they support students' critical thinking development at the university level. In order to answer these substantial research questions, a qualitative research design was employed involving semi structured interviews with sixteen teachers from different disciplines namely sociology, psychology, political sciences and English as a foreign language. These interviews were conducted online with teaches from one of the Algerian universities named Larbi Ben Mhidi university in Oum Bouaghi province in Algeria.

Regarding the first research question that sought teachers' understanding of critical thinking, the literature (Kuhn, 1999) insisted on having a precise and systematic definition of critical thinking for a meaningful education. In this regard, and after the analysis of the data, I have found that the definitions of critical thinking held by the Algerian teachers in this study fall broadly into two categories; those who focus on the dispositional aspects of critical thinking and those who focus on critical thinking as a process that entails a set of skills. This denotes that some teachers associated critical thinking with one or more higher order skills. Others, however, have linked critical thinking also to dispositional aspects such as flexibility, tolerance, open-mindedness and inquisitiveness which they believed are necessary to exercise critical thinking (Indrasiene, 2021).

The findings have also revealed that the overlapping understanding of teachers towards critical thinking within the context of their teaching eliminates disciplinary differences. The teachers truly had overlapping views about critical thinking regardless of their disciplinary areas and thus contributed to understanding critical thinking in the Algerian higher education and laid the groundwork for future research into conceptualising critical thinking and widening teachers' perspectives in this subject matter.

Moreover, for the second research question concerning the teachers' perceptions towards their support of the development of students' critical thinking. These teachers recognise the value of developing their students' critical thinking abilities, yet their teacher-centred approach and dominant roles often prevents any meaningful interaction from taking place and instead focuses on imparting a predetermined body of knowledge (Amin & Corebima, 2016). In addition, a major contribution to our understanding of teachers' perspectives identified that teachers acknowledged that there are certain obstacles and difficult circumstances that prevent them from doing so. This is likely due to the lack of teaching materials and resources, overcrowded classrooms, time constraints, and the syllabus overload. Additionally, some students' characteristics hinder the development of these students' critical thinking such as their egocentrism, indifference and shyness. It was also found that the higher education system (Bachelor, Master, Doctorate) itself created so many hindrances to the support of the development of critical thinking although in theory it states that students' critical thinking development should be an educational priority. Among these hindrances are the lack of resources and training programs, electing quantity over quality and the deficiency of a bridge between theory and practice.

It was concluded as well that not all of the teachers always support the development of the dispositional aspects of critical thinking focusing only on the skills of the process. This is interesting as it could help us understand why students' critical thinking might not be fully developed. The dispositional dimension of critical thinking as suggested Ennis (2016) is fundamental for critical thinking to be exercised. This is indicative of the need to further research into critical thinking dispositions.

Furthermore, the teachers' responses have uncovered different methodologies used to support and promote critical thinking in the classroom; they cited classroom discussions, debates, workshops, brainstorming, problem solving activities, asking questions throughout the lesson and lastly students' self- assessment. Therefore, the teachers asserted their use of a

variety of methodologies to promote their students' critical thinking realising its high importance at the personal, professional and social levels. These findings provide some tentative initial evidence that the teachers in the Algerian higher education context are aware of the significance of developing their students' critical thinking, yet they are restrained into unsuccessful attempts.

I concluded that there is no definitive or exhaustive definition of critical thinking among Algerian teachers at the university level although there is an overlapping understanding of the concept as critical thinking is still a complex and a difficult notion. What teachers agree on in the present study is the high importance of critical thinking (Ouahani & Hiba, 2023) and the variety of methods that can be used to foster students' critical thinking skills only as for Algerian teachers, the majority does not support dispositional aspects of critical thinking which could in turn imply the failure to develop students' critical thinking. Much of these findings do align with the western thoughts about critical thinking particularly in regard to its conceptualisation, importance and development among students. Additionally, it could be concluded based on the findings that the teachers were discontent about the system as they felt unable to help students develop their critical thinking due to hindrances caused by the system itself. Overall, educators across the various fields have highlighted the significance of critical thinking and proposed ways to incorporate it into the higher education system where they have urged policy makers too to address the previously discussed factors that impede students' development of critical thinking.

7.3 Significance of the research findings

The current research has several points of strength which adds significant and new insights to the existing body of knowledge. These points will be outlined below.

First, the current study sought to gather relevant data in exploring how the Algerian teachers understand and conceptualise critical thinking and to what extent they believe they support its development within their context. The insights gained from this study assisted to find out more about how this debatable concept is actually understood first to be promoted afterwards by academics within their classroom settings as teachers' perspectives are believed to be reflected in their practices and actions. The study has gone some way towards enhancing the understanding of critical thinking in the Algerian context. Most studies, particularly in the Algerian context, emphasising critical thinking focused on the development of students' critical thinking and overlooked studying teachers' understanding of that complex concept.

This study; however, focuses on both the teachers' conceptualisation and their development of students' critical thinking. In addition, the study highlighted significant findings regarding these teachers' insights of the impediments that are interfering in the development of students' critical thinking in the Algerian higher education context. In this essence, the work contributes to existing knowledge of critical thinking by providing a clear picture of the state of critical thinking in this particular context which categorises critical thinking under two sets of definition: one that defines critical thinking as a set of skills and the other that describes critical thinking as a process that involves a set of skills and dispositions. The findings reported in the current study also shed light on the idea that the dispositional dimension of critical thinking is to some extent neglected as not all the teachers view critical thinking as composed of dispositions.

Second, whilst much has been published in the field of critical thinking globally (Liu et al., 2014) and particularly in the western contexts, little is known about how it is conceptualised and practiced in the context of Algerian higher education and other non-western or developing countries. That is why a decolonial approach to study critical thinking is seen interestingly advantageous. Although the Algerian government has issued regulations concerning developing students' autonomy and critical thinking skills in both secondary and tertiary education, yet there is a lack of information about teachers' understanding and implementation of this concept.

Additionally, and to the best of my knowledge, qualitative research about the conceptualisation of critical thinking in the Algerian context are scarce. I could not locate any studies that have explored thoroughly and exclusively teachers' conceptualisation of critical thinking in Algeria . Therefore, one of the purposes of the current qualitative study is to address this gap by looking specifically at the Algerian context and obtaining teachers' views and in-depth insights about not only teachers' understanding of critical thinking, but also how these teachers believe they support its development in classrooms and what hinders this process. This may be beneficial not only for the Algerian context but also for other countries which have been eager to promote critical thinking in their educational contexts and it will help to bridge the gap between critical thinking being only a policy and its reality in these contexts. It could also help educators understand this debatable concept and policy makers to tackle the inhibiting factors of critical thinking development.

The study is significant for it highlighted the importance of critical thinking at various levels and suggested ways to integrate it into the educational system despite the existence of several hindrances revealed by the teachers. One of the significant issues that are highlighted in the current study relate to how critical thinking is perceived in Islamic countries and the cultural, religious and contextual factors involved. While it is important to note that Islamic countries are diverse and have varying perspectives, the study sheds a new light on the need for more research and a conceptual unpacking of critical thinking and to address the misconceptions surrounding the concept in these particular contexts i.e., the Islamic societies and to view critical thinking from a decolonial perspective.

Third, another point of strength lies in the methodological approach adopted in the current study. A qualitative research design was adopted because it offers an effective way to explore experiences and perceptions of the construct and generates unexpected insights through the open-ended nature of enquiries. Therefore, the approach adopted in this study seems convenient as it ensures responding to the research questions posed which target not simply an evaluative judgment of the nature of critical thinking, but rather, it is to capture authentic, precise and significant perceptions around critical thinking and to draw out some important implications for teaching and learning and policy making in the Algerian higher education context. The results of this study would not have been possible if the research had only focused on testing certain variables through experimentation or using questionnaires administered to large samples. This may therefore be considered to be a significant contribution to the critical thinking research, particularly in this context.

Finally, this study is important for it also links to the idea of the disconnect between teachers' beliefs about what is important and what they are able to do due to the different contexts in which they work. Furthermore, what distinguishes the current study is that it identified some challenging hindrances of critical thinking that were related to the teacher's approach to teaching particularly their dominance in the classroom and other barriers related to students' psychology, contextual barriers, the lack of knowledge of critical thinking and the failure of the BMD system in the support of students' development of critical thinking. The teachers criticised the system overall and criticised particular instances where they found themselves incapable of supporting the development of students' critical thinking due to obstacles created by the system itself. This could also inform neighbouring countries who are adopting the BMD system and have approximately a similar infrastructure as Algeria.

Additionally, it calls on policy makers to address these issues and work towards students' critical thinking development.

7.4 Limitations of the study

As is the case with any research, the current study has certain limitations that could not be avoided. Four limitations have been noted seemingly. First, the study does not allow for the generalisation of the findings as it focused on a small sample comprising some teachers from several disciplines. Second, due to the complexity of critical thinking, (critical thinking is a multi-faceted concept, Halpern, 2014), there are many facets that need to be explored. However, with the limited framework of this thesis, it is difficult to consider any one aspect in great detail. I have explored various elements of critical thinking but have not gone into any one of them in great depth. Third, only interviews with teachers provided the data in the current study as this research looks into teachers' views on critical thinking and how they believe they support its development and what impedes such a process, yet little is known about students' understanding of critical thinking and whether the teachers share the same conceptualisation of this concept with their students in the context of Algerian higher education.

Fourth, although at first the research aimed at drawing out some conclusions or more reliable themes about how the discipline impacts the understanding of critical thinking, yet I could not have any definite findings in this regard as most of the opinions were similar or overlapping regardless of the discipline. This could also be due to the small number of participants interviewed in this study; therefore, a larger sample is recommended for future studies. Additionally, the study could have been enhanced by using a supporting research method such as a classroom observation to provide a more in-depth analysis, yet due to some practical constraints, this was not possible. Fifth, due to the time limitations, it was not possible to have another researcher analyse the same data to check if similar results were obtained, yet the supervisors assisted in helping to direct the researcher throughout the whole analysis process. Overall, all research works have some limitations, and this study is no exception, therefore it is recommended that these weaknesses should be considered in future research.

7.5 Directions for future research

With regard to the limitations of the current study indicated above and drawing from the findings identified in the present study, I suggest some directions to be undertaken for future research in this section.

First, as the focus of the current study was on the teachers' insights about critical thinking, further research is suggested to be directed towards exploring Algerian students' perceptions towards their understanding of critical thinking and their beliefs of the helpful practices in developing their critical thinking skills at university. The need for such research could shed light on prominent issues particularly related to the dispositional aspects of critical thinking from the students' part and the reasons behind the beliefs of students concerning their lack of critical thinking and the hindrances challenging the situation.

Second, other research methods such as classroom observation could also be used to get more themes and to compare teachers' perceptions with their practices in developing their students' critical thinking. The classroom observation could validate teachers' views or reveal more interesting findings concerning teachers' practices regarding critical thinking and the barriers impeding critical thinking development. As the findings revealed many interfering obstacles in the development of students' critical thinking, further research is needed in this area to help develop strategies that could eliminate these hindrances particularly in the present study context. In addition, a larger sample of teachers could be employed and other different disciplines such as science, technology or mathematics could be studied in the Algerian context as views may vary from those of social sciences or English language teaching. This may lead to construct a clearer picture of the state of critical thinking in this particular context and more it may invoke surprising perspectives from actual settings and practices or disciplinary differences in conceptualising critical thinking and concerning the hindrances interfering as well.

Third, as indicated earlier in the literature review, critical thinking is a multi- faceted concept, therefore further research could be directed towards examining more facets of critical thinking particularly the dispositional aspects of critical thinking. Further research needs to examine more closely the links between critical thinking dispositions and the support of students' development of critical thinking in classrooms. A greater focus on these dispositions could produce interesting findings that could be usefully explored in further research particularly in the Algerian context for this issue is still left under-researched.

Fourth, comparing Algerian teachers' perceptions of critical thinking with those of western or non-Algerian teachers' perceptions could be another feasible direction for future research. The aim is to find out more detailed differences and similarities in their understanding and development of students' critical thinking and how these contexts could address issues inhibiting students' critical thinking development. This is also important in the sense that distinct cultures have unique views and understanding the world. Thus, by comparing Western and non-Western viewpoints about critical thinking, we can gain more insights on how diverse cultures value and perceive various aspects of critical thinking and consider alternative viewpoints that may offer more valuable insights.

Fifth, in the current context of our research, only few teachers considered barriers related to social norms that prevent students' critical thinking development; this could have different indications as discussed in section (6.4.5). Therefore, further research would be required to explore such obstacle to the development of students' critical thinking in the Algerian higher education context particularly. By exploring this type of hindrances, we can become aware of such challenges and work towards minimising their impact on students' critical thinking development. Moreover, the findings of the current study have also revealed that shyness is an inhibiting element that halts students from developing their critical thinking. Yet, scarce research was found discussing this issue particularly in the Algerian higher education context, therefore researchers need to spotlight this issue and explore how this emotional factor among others could impede the development of students' critical thinking, particularly in this context. Understanding such barrier to students' critical thinking development is crucial because both social norms and emotional factors can restrain sound judgment and prevent students and teachers alike from making objective and rational decisions through critical thinking.

At last, the findings of this study indicated three methodologies namely brainstorming, workshops and self-assessment. The teachers believe these methodologies to be useful, but they are less preferred and not widely practiced for the purpose of developing students' critical thinking. There is little research about their effectiveness in this regard; consequently, further research is needed to examine their value for the development of students' critical thinking and to investigate how teachers actually use them in the context of Algerian higher education. Additionally, concerning the implementation of the questioning technique for the development of students' critical thinking, further research is needed to know more about this technique as to how it should be used effectively, what questions are to be more appropriate and how they should be asked particularly in the context of Algerian higher education.

7.6 Recommendations for professional practice in Higher Education

Despite the wide agreement about the importance of integrating the teaching and development of critical thinking within the educational and training programs (Jawoniyi, 2015), yet students are still believed to be lacking critical thinking although promoting students' critical thinking for individuals to cope with a rapidly changing world became a necessity (Kanik , 2010). As the findings of this study have been revealed considering critical thinking conceptualisation, development and barriers, some practices will be recommended in this study to be adopted by educators in the higher education context to foster students' development of critical thinking. These practices will be discussed as follows:

- It is important to have a clear conceptualisation of critical thinking in order to inform practice within classrooms. Educators must be well-informed about the different conceptualisations of critical thinking to be able to practise it and support its development in the classroom. Educators must also consider the dispositional aspects of critical thinking, thus knowing that a critical thinker should have the necessary dispositions to exercise critical thinking. Teachers should emphasise the importance of such facets to develop students' critical thinking because the failure to cultivate and develop these habits of mind will prevent the exercise and development of students' critical thinking (Ennis, 2016). Consequently, acknowledging the various facets of critical thinking is imperative.
- Teachers are aware that critical thinking is an essential skill in today's world, yet they must be aware of the rapidly advancing technology taking artificial intelligence as an example that is being already part of our everyday lives; it is crucial then for teachers to expand their understanding of critical thinking to use it in evaluating the validity of the information received as critical thinking is a skill that cannot be replicated by machines. Moreover, educators are also called upon the integration of critical thinking within the curriculum whereas policy makers are required to deal with issues involving critical thinking development among students for the role that it plays in their personal and social development and for having a profound impact on students' academic performance. Thus, all should work collaboratively to invest in the formation of critical thinkers.
- For the development of students' critical thinking, the teachers' focus on such practice should be frequent and their teacher- centredness in the classroom should be disregarded as it discourages any kind of interaction and emphasises only the transmission of a designated body of knowledge as indicated in the previous sections. Thus, the teachers leading a teacher centred classroom need to change their approaches of teaching to a more modern and

innovative ones and to create a learning environment which allows students to be more independent and engaging. It is also recommended that policy makers and educators investigate strategies to address student reluctance to engage in active learning, which is necessary for the development of critical thinking skills. Therefore, a learner- centred approach and an explicit teaching of critical thinking are prerequisites.

- The teachers are required to be careful and more selective in implementing and incorporating teaching methods and strategies suitable for learners' needs to promote their 21st century skills, including critical thinking skills. The study findings indicated how the problem- solving activities helped to think critically and also suggested that such activities should be integrated within the curriculum aiming at improving students' critical thinking skills. Then, it is recommended that such activities should be frequently practiced in the classroom on the basis of their usefulness. Furthermore, asking questions is among the strategies believed to be effective, yet as the findings have advocated, teachers should be trained well to be able to formulate such thought- provoking questions which lead to critical thinking. Thus, it is advised that teachers obtain a professional training in the field of critical thinking teaching and development that includes guidance on the implementation of methods such as Socratic questioning. Considering training programs, the current study uncovered that teachers' engagement with critical thinking in classrooms was not stressed out in teacher education and training programs within the Algerian higher education context. Therefore, the system should invest in programs that prepare teachers for the integration and practice of critical thinking within their disciplines.
- The current study advises policy makers to re-evaluate the syllabus to integrate the teaching activities and strategies promoting critical thinking within the curriculum. It is also advised to allocate sufficient time for teachers to plan and practise these strategies in classroom to lead to the attainment of a better education that supports the development of students' critical thinking.
- Teachers are also advised to clarify critical thinking for their students so that they understand the concept and practice it since knowledge of critical thinking and disciplinary knowledge are essential in the critical thinking process.
- Teachers' reliance on assessment types that only require information retention triggers passive recapitulation of theoretical input only and does not serve critical thinking development as discussed in the current study findings. Therefore, the assessment system should be changed

to focus more on critical thinking and less on memorising content. The situation should not be overlooked for its significant importance in the development of students' critical thinking.

- As indicated in the discussion section earlier (Chapter 6), the different barriers revealed are interrelated and they all interfere in creating more obstacles for the development of students' critical thinking. Thus, it is recommended that they should be tackled altogether in order to enhance the status of critical thinking in the current study context (Onosko, 1991).

7.7 Conclusion

This research is an investigation of what is underpinning the critical thinking debate in the Algerian higher education context. The key objectives of the present study were to investigate how these teachers comprehend critical thinking, to what extent they believe they support its development among students, and by which means they do that. The research aims were fulfilled, and all the research questions were answered through the interesting findings revealed from the interviews where generated themes have been discussed. The present study adds to the body of knowledge particularly the Algerian one, by providing empirical evidence to support the debates considering critical thinking as an amorphous concept difficult to mould in a single comprehensive definition.

Furthermore, the current study investigating the Algerian university teachers' conceptualisation of critical thinking and their understanding of the nature of critical thinking revealed teachers' more focus on the skills dimension of critical thinking rather than the dispositions of critical thinkers. Moreover, the study involved teachers' perspectives considering the high importance of critical thinking at various levels and included suggestions of educators from the different disciplines to integrate critical thinking within the educational system besides insisting on policy makers to deal with issues inhibiting critical thinking development.

In addition, the study has also identified some limitations that teachers were unsatisfied about which prevented them from supporting the development of students' critical thinking. Apparently, the state of critical thinking in the Algerian higher education context in the current research is believed to be highly related to its practice in the classroom, to the barriers impeding its development and somehow unrelated to the teachers understanding of critical thinking or their awareness of its importance at different levels. The teachers clearly try to some extent to develop their students' critical thinking through different methodologies, yet there are so many hinderances that impede this practice within that context, thus these challenges need to be addressed before critical thinking can be effectively developed among

students. Hopefully, these findings which explored the insights of teachers in the Algerian higher education sector regarding critical thinking could inform policy makers to address issues related to the development and practice of students' critical thinking focusing particularly on the dispositional dimension of critical thinking and approaching learner-centredness.

References

21st Century Skills Minnesota: Student outcomes and support systems partnership with STEM initiative. (n.d.). Retrieved November 17, 2020, from http://www.21stcenturyskillsmn.org/

Abasaid, M., & Ferreira, M. P. (2022). Perception and knowledge of critical thinking: A qualitative research study with professors of higher education in Oman. *Journal of Educational Studies and Multidisciplinary Approaches (JESMA)*, *2*(2), 173–190. https://doi.org/10.51383/jesma.2022.38

Abbasi, A., & Izadpanah, S. (2018). The relationship between critical thinking, its subscales and academic achievement of English language course: The predictability of educational success based on critical thinking. *Academy Journal of Educational Sciences*, *2*(2), 91–105. https://dx.doi.org/10.31805/acjes.445545

Abdaoui, F. S., & Grine, N. (2020). The effect of university education on developing learner's critical thinking skills: A comparison between freshmen and senior learners of English as a foreign language at the University of Guelma. *Journal of Psychological and Educational Sciences*, *2*(6), 389–398.

Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research*, *85*(2), 275–314. https://doi.org/10.3102/0034654314551063

Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage meta-analysis. *Review of Educational Research*, *78*(4), 1102–1134. https://doi.org/10.3102/0034654308326084

Achoura, M., & Merrouche, S. (2021). Critical thinking in the Algerian secondary school EFL class. *Sciences Humaines*, *32*(2), 767–776.

Adams, M. H., Whitlow, J. F., Stover, L. M., & Johnson, K. W. (1996). Critical thinking as an educational outcome: An evaluation of current tools of measurement. *Nurse Educator*, *21*(3), 23–32. https://doi.org/10.1097/00006223-199605000-00009

Adhler, R. H. (2022). Trustworthiness in qualitative research. *Journal of Human Lactation*, *38*(4), 598–602. https://doi.org/10.1177/08903344221116620

Ahmed, S., & Swan, E. (2006). Doing diversity. *Policy Futures in Education, 4*(2), 96-100

Akhter, S. (2019). Cultural barriers to critical thinking skills: A case of Bangladeshi ESL classrooms. *The Journal of Teachers Helping Teachers*, *7*, 130–149.

Aliakbari, M., & Sadeghdaghighi, A. (2013). Teachers' perception of the barriers to critical thinking. *Procedia-Social and Behavioral Sciences*, *70*, 1–5. http://doi.org/10.1016/j.sbspro.2013.01.031

Alharahsheh, H. H., & Pius, A. (2020). A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences, 2*(3), 39-43.DOI: 10.36348/gajhss.2020.v02i03.001

Allamnakhrah, A. (2013). Learning critical thinking in Saudi Arabia: Student perceptions of secondary pre-service teacher education programs. *Journal of Education and Learning*, *2*(1), 197–210. https://doi.org/10.5539/jel.v2n1p197

Almalki, M. (2019). Seek, Read, Present, Question (SRPQ): A feasibility study of an integrated strategy to teach history and critical thinking in a high school in Saudi Arabia, Durham theses, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/13226/

Al Mutairi, A. N. M. (2015). The effect of using brainstorming strategy in developing creative problem-solving skills among male students in Kuwait: A field study on Saud Al-Kharji School in Kuwait City. *Journal of Education and Practice*, *6*(3), 136–145

Altinyelken, H. K. (2015). Democratising Turkey through student-centred pedagogy: Opportunities and pitfalls. *Comparative Education*, *51*(4), 484–501. https://doi.org/10.1080/03050068.2015.1081794

Altinyelken, H. K. (2021). Critical thinking and non-formal Islamic education: Perspectives from young Muslims in the Netherlands. *Contemporary Islam*, *15*, 267–285. https://doi.org/10.1007/s11562-021-00470-6

Álvarez-Huerta, P., Muela, A., & Larrea, I. (2022). Disposition toward critical thinking and creative confidence beliefs in higher education students: The mediating role of openness to diversity and challenge. *Thinking Skills and Creativity*, *43*, Article 101003. https://doi.org/10.1016/j.tsc.2022.101003

Alwehaibi, H. U. (2012). Novel program to promote critical thinking among higher education students: Empirical study from Saudi Arabia. *Asian Social Science*, *8*(11), 193–204. http://doi.org/10.5539/ass.v8n11p193

Alzahi, S. (2016). Makanet al-maktaba al-djamiya fi siyasat tatwir al-taalim al-ali fi Al-djazair: Dirasa maydaniya bi djamiat Annaba, kasantina, and skikda [the status of university library in developing the Algerian higher education's policies: Field study at the universities of Annaba, Constantine, and Skikda]. *Diraset wa Abhath*, *6*(16), 365–376

Amin, A. M., & Corebima, A. D. (2016). Analisis persepsi dosen terhadap strategi pembelajaran reading, questioning, and answering (RQA) dan argument-driven inquiry (ADI) pada Program studi pendidikan biologi di kota Makassar. In Seminar Nasional II 2016 Biologi, Pembelajaran, dan Lingkungan Hidup Perspektif Interdisipliner. Malang: Prodi Pendidikan Biologi dan PSLK Universitas Muhammadiyah Malang.

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: complete edition*. Addison Wesley Longman, Inc.

Andersson, T., & Djeflat, A. (2013). *The real issues of the middle east and the Arab spring: Research, innovation, and entrepreneurship*. Springer.

Atkinson, D. (1997). A Critical approach to critical thinking in TESOL. *TESOL Quarterly*, *31*(1), 71–94. https://doi.org/10.2307/3587975

Baghoussi, M. (2021). Critical thinking in Algerian secondary school EFL classes: Expectations and reality. *Arab World English Journal (AWEJ)*, *12*(3) 97–110. https://doi.org/10.24093/awej/vol12no3.7

Bailin, S. (2002). Critical thinking and science education. *Science and Education*, *11*(4), 361–375. https://doi.org/10.1023/A:1016042608621

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999a). Conceptualizing critical thinking. *Journal of Curriculum Studies*, *31*(3), 285–302. https://doi.org/10.1080/002202799183133

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999b). Common misconceptions of critical thinking. *Journal of Curriculum Studies*, *31*(3), 269–283. https://doi.org/10.1080/002202799183124

Bangert-Drowns, R. L., & Bankert, E. (1990, April 16–20). *Meta-analysis of effects of explicit instruction for critical thinking* [Paper presentation]. The American Educational Research Association Annual Meeting, Boston, MA, United States.

Barak, M., & Levenberg, A. (2016). Flexible thinking in learning: An individual difference measure for learning in technology-enhanced environments. *Computers & Education*, *99*, 39–52. http://doi.org/10.1016/j.compedu.2016.04.003

Barnett, R. (2004). Learning for an unknown future. *Higher Education Research & Development*, *23*(3), 247–260. https://doi.org/10.1080/0729436042000235382

Bataineh, O., & Alazzi, K. F. (2009). Perceptions of Jordanian secondary schools' teachers towards critical thinking. *International Education*, *38*(2), 56–72.

Behar-Horenstein, L., & Niu, L. (2011). Teaching critical thinking skills in higher education: A review of the literature. *Journal of College Teaching & Learning*, *8*(2), 25–41. http://doi.org/10.19030/tlc.v8i2.3554

Belecina, R. R., & Ocampo, J. M. (2018). Effecting change on students' critical thinking in problem solving. *International Journal for Educational Studies* (*Educare*), *10*(2), 109–118.

Benesh, S. (1993). Critical thinking: A learning process for democracy. *TESOL Quarterly*, *27*(3), 545–548. https://doi.org/10.2307/3587485

Benmouhoub, L. (2022). Teaching critical thinking in EFL classroom: Students and teachers' perspectives. *Journal of Languages and Translation*, *2*(1), 23–35.

Benmouhoub, L. & Boukhedimi, Y. (2019). Towards a Dynamic Approach to Assessing Students' Critical Thinking Skills in Higher Education. *Revue Traduction et Langues 18*(2), 115-128.

Benner, P., Sutphen, M., Leonard, V. and Day, L. (2010) Educating nurses: A call to radical transformation. A Wiley Imprint, San Francisco.

Benouar, D. (2013). Algerian experience in education, research and practice. *Procedia – Social and Behavioral Sciences*, *102*. 361–367. https://doi.org/10.1016/j.sbspro.2013.10.751

Benziane, A. (2004). Economic reforms in Algeria and their impact on higher education and student benefits. *The Journal of North African Studies*, *9*(2), 102–114. https://doi.org/10.1080/1362938042000323374

Beşer, A., & Kissal, A. (2009). Critical thinking dispositions and problem-solving skills among nursing students. *Dokuz Eylül Üniversitesi Hemşirelik Yüksekokulu Elektronik Dergisi* (*DEUHYO ED*), *2*(3), 88–94. http://hdl.handle.net/20.500.12397/4526

Beyer, B. K. (1995). *Critical thinking*. Phi Delta Kappa Educational Foundation.

Bezanilla, M. J., Galindo-Domínguez, H., & Poblete, M. (2021). Importance of teaching critical thinking in higher education and existing difficulties according to teacher's views. *Multidisciplinary Journal of Educational Research*, *11*(1), 20–48.

Bezanilla, M. J., Poblete, M., Fernández-Nogueira, D., Arranz, S., & Campo, L. (2018). El pensamiento crítico desde la perspectiva de los docentes universitarios. *Estudios Pedagógicos*, *44*(1), 89–113.

Bhambra, G. K., Gebrial, D., & Ni¸ sancıoglu, K. (2018). *Decolonising the university* . Pluto Press.

Bloom, B. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Longman.

Bogdan, R.C., & Biklen, S.K. (1998). *Qualitative research for education: An introduction to theory and methods*. Allyn and Bacon.

Boholano, H. B. (2017). Smart social networking: 21st century teaching and learning skills. *Research in Pedagogy*, *7*(1), 21–29.

Aberšek, B. (2022). Science, critical thinking, multi-attribute decision making. *Problems of Education in the 21st Century*, *80*(4), 494–498. http://dx.doi.org/10.33225/pec/22.80.494

Bouchikhi, F., & Barka, Z. (2017). Higher education in Algeria: Achievements and challenges-1963 to 2017, *Revue Algerienne de Finances Publiques*, *7*(1), 24–34. https://doi.org/10.33107/ubt-ic.2017.115

Bougherara, R., & Khaldi, K. (2021). Investigating the role of multimodality in promoting Algerian EFL students' critical thinking skills case study: Third year EFL students at Biskra University. *Traduction et Langues*, *20*(2), 149–164.

Boumediene, H., Hamadi, N. A., & Berrahal, K. F. (2021). Classroom debate to enhance critical thinking skills. *Majalet El-bahith li El-ouloum El-riyadia wa El-ijtimaia*, *4*(7), 441–457.

Braun, V., & Clarke, V. (2012). Thematic analysis. in H. Cooper, P. M. Camic D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. https://doi.org/10.1037/13620-004

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE Publications Ltd.

Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, *18*(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37–47. https://doi.org/10.1002/capr.12360

Britannica, T. Editors of Encyclopaedia (2021, April 29). *Algeria summary. Encyclopaedia Britannica*. https://www.britannica.com/summary/Algeria

Brookfield, J. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*. Jossey-Bass.

Brookfield, S. (2002). Reassessing subjectivity, criticality, and inclusivity: Marcuse's challenge to adult education. *Adult Education Quarterly*, *52*(4), 265–280. https://doi.org/10.1177/074171302400448609

Brookfield, S. D., & Preskill, S. (2005). *Discussion as a way of teaching: Tools and techniques for democratic classrooms* (2nd ed.). Jossey-Bass.

Browne, M. N., & Keeley, S. K. (2013). Asking the right questions: A guide to critical thinking (pp. 1-10). Boston, MA: Pearson Learning Solutions.

Bryman, A. (2015). *Social research methods* (5th ed.). Oxford University Press.

Burbules, N. C., & Berk, R. (1999). Critical thinking and critical pedagogy: Relations, differences, and limits. In T. Popkewitz & L. Fendler (Eds.), *Critical theories in education: Changing terrains of knowledge and politics* (pp.1–17). Routledge.

Butchart, S., Forster, D., Gold, I., Bigelow, J., Korb, K., Oppy, G., & Serrenti, A. (2009). Improving critical thinking using web-based argument mapping exercises with automated feedback. *Australasian Journal of Educational Technology*, *25*(2), 268–291. https://doi.org/10.14742/ajet.1154

Butterworth, J., & Thwaites, G. (2013). *Thinking Skills: Critical Thinking and Problem Solving*. Cambridge University Press.

Chan, C. K., Fong, E. T., Luk, L. Y., & Ho, R. (2017). A review of literature on challenges in the development and implementation of generic competencies in higher education curriculum. *International Journal of Educational Development*, *57*, 1–10. https://doi.org/10.1016/j.ijedudev.2017.08.010.

Chew, S. W., Lin, I. H., & Chen, N. S. (2019). Using Socratic questioning strategy to enhance critical thinking skill of elementary school students. *IEEE 19th International Conference on Advanced Learning Technologies (ICALT)*, 290–294. https://doi.org/10.1109/ICALT.2019.00088

Chen, D. L., & Rattray, J. (2017). Transforming thinking through problem-based learning in the news media literacy class: Critical thinking as a threshold concept towards threshold capabilities. *Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education*, *12*(2), 272–293.

Choy, S. C., & Cheah, P. K. (2009). Teacher perceptions of critical thinking among students and its influence on higher education. *International Journal of Teaching and Learning in Higher Education*, *20*(2), 198–206.

Committee for Economic Development (2015). What are the essential competencies on the job? https://bit.ly/2Ojrlgb

Cooper, D. J., & Morgan, W. (2008). Case study research in accounting. *Accounting horizons*, *22*(2), 159–178. https://doi.org/10.2308/acch.2008.22.2.159

Cornejo, C.O., Lepe Martínez, N., Díaz Mujica, A., Merino Escobar, J., & Larraín Sutil, A. (2018). Profesorado. Revista de currículum y formación del profesorado, 22(4), 443–462. https://doi.org/10.30827/profesorado.v22i4.8432.

Cortazzi, M., Pilcher, N., & Jin, L. (2011). Language choices and 'blind shadows': Investigating interviews with Chinese participants. *Qualitative Research*, *11*(5), 505-535. https://doi.org/10.1177/1468794111413225

Cottrell, S. (2017). *Critical thinking skills: Effective analysis, argument and reflection*. Bloomsbury Publishing.

Creswell, J. W. (2013). *Research design: qualitative, quantitative, and mixed methods approaches*. Sage publications.

Danial, M. (2010). Pengaruh strategi PBL terhadap keterampilan metakognisi dan respon mahasiswa. Chemica, 11(2).

Darby, N. M., & Rashid, A. M. (2017). Critical thinking disposition: The effects of infusion approach in engineering drawing. *Journal of Education and Learning*, *6*(3), 305–311. http://doi.org/10.5539/jel.v6n3p305

Davies, M. (2015). A model of critical thinking in higher education. In: M. B. Paulsen (ed.), *Higher education: Handbook of theory and research* (vol. 30, pp. 41–92). Springer Cham. https://doi.org/10.1007/978-3-319-12835-1_2

Davies, M. (2013). Critical thinking and the disciplines reconsidered. *Higher Education Research and Development*, *32*(4), 529–544. https://doi.org/10.1080/07294360.2012.697878

Davies, M., & Barnett, R. (2015). The Palgrave handbook of critical thinking in higher education. In The Palgrave Handbook of Critical Thinking in Higher Education. https://doi.org/10.1057/9781137378057

De Saxe, J. G., & Trotter-Simons, B.-E. (2021). Intersectionality, Decolonization, and Educating for Critical Consciousness: Rethinking Praxis and Resistance in Education. *Journal of Thought, 55*(1/2), 3–20. https://www.jstor.org/stable/27082272

De Vaus, D. (2001). *Research design in social research*. SAGE Publications Ltd.

Dellantonio, S., & Pastore, L. (2021). Ignorance, misconceptions and critical thinking. *Synthese*, *198*, 7473–7501. https://doi.org/10.1007/s11229-019-02529-7

Denscombe, M. (2010). *The good research guide: For small-scale social research projects* (4th ed.). Open University Press.

Deraz, M. A.(1957 *).An-Naba Al-Azeem.*. Dar Al-Qlem.

Department of Higher Education and Scientific Research, (2020). Universities. Retrieved from: https://www.mesrs.dz/ar/universites

Department of scientific research and technological development. (2019).

DeWaelsche, S. A. (2015). Critical thinking, questioning and student engagement in Korean university English courses. *Linguistics and Education*, *32*, 131–147. https://doi.org/10.1016/j.linged.2015.10.003

Dewey, J. (1910). *How we think*. Heath & Co Publishers.

Dewey, J. (1916). Nationalizing education. *Journal of Education*, *84*(16), 425–428. https://doi.org/10.1177/002205741608401602

Dewey, J. (1933). *Democracy and Education*. The McMillan Company.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. D.C. Heath and Company.

Dewey, J. (1938). *Experience and education*. The McMillan.

Directorate-General for Scientific Research and Technological Development (DGRSDT). (2019). Department of scientific research and technological development. Retrieved December 03, 2019, from https://dgrsdt.dz/

Directorate-General for Scientific Research and Technological Development (DGRSDT). (2020). Department of scientific research and technological development. Retrieved January16, 2020, from https://dgrsdt.dz/

Djebbari, Z., & Djebbari H. (2020). Language policy in Algeria: An outlook into reforms. Al-Lisāniyyāt, *6*(1), 40-53. https://www.asjp.cerist.dz/en/downArticle/26/26/1/118469

Djillali, S. (2013). *Wakia idaret al-djawda al-chamila fi mouasaset al-taalim al-jamiai: Dirasa maydania fi kouliyet al-ouloum* [The reality of quality assurance administration at higher education institution: A field study at the faculty of economy] [Risalet Doctorat, University of Benyoucef Benkhedda-al-djazaer 1]. La Bibiothèque Virtuelle de L'université d'Alger. http://hdl.handle.net/1635/9117.

Doody, O., & Noonan, M. (2013). Preparing and conducting interviews to collect data. *Nurse researcher, 20*(5).

Dörnyei, Z. (2007). *Research methods in applied linguistics: quantitative, qualitative, and mixed methodologies*. Oxford University Press.

Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, *17*(2), 160–166.

Dwyer, C. P. (2017). *Critical thinking: Conceptual perspectives and practical guidelines*. Cambridge University Press. https://doi.org/10.1017/9781316537411

Dwyer, C.P., Hogan, M.J. & Stewart, I. (2014). An integrated critical thinking framework for the 21st century. *Thinking Skills & Creativity*, *12*, 43–52. https://doi.org/10.1016/j.tsc.2013.12.004

Dwyer, L., Gill, A., & Seetaram, N. (2012). *Handbook of research methods in tourism: quantitative and qualitative approaches*. Edward Elgar.

Scientific research in Independent Algeria, pp 01-10. Retrieved from http://www.dgrsdt.dz/admin/news_upload/La_Recherche_Scientifique_en_Algerie

Education, Audiovisual and Culture Executive Agency (EACEA). (2021). Algeria Country Fiche. [Report].https://neighbourhood-enlargement.ec.europa.eu/european-neighbourhood-policy/countries-region/algeria_en

Ekamilasari, E., & Pursitasari, I. D. (2021). Students' critical thinking skills and sustainability awareness in science learning for implementation education for sustainable development. *Indonesian Journal of Multidisciplinary Research*, *1*(1), 121–124. https://doi.org/10.17509/ijomr.v1i1.33792

El-Akkad, A. (2013). *Al-Tafkeer Fareedah Islamiyah*. Sidon, Beirut: Publications of the Modern Library (Sidon Beirut).

El Soufi, N., & See, B. H. (2019). Does explicit teaching of critical thinking improve critical thinking skills of English language learners in higher education? A critical review of causal evidence. *Studies in Educational Evaluation*, *60*, 140–162. https://doi.org/10.1016/j.stueduc.2018.12.006

Elder, L. (2007, September). *Our concept of critical thinking*. Foundation for Critical Thinking. http://www.criticalthinking.org/aboutCT/ourConceptCT.cfm

Elder, L., & Paul, R. (2004). Critical thinking... and the art of close reading (Part II). *Journal of Developmental Education*, *27*(3), 36–37.

Elrabii, S. B. H. (2008). *Al-taaleem al-ali fi al-asri al-maarifa* [Higher Education in the Age of Knowledge]. Dar Al-Chourouk li Nashr wa Tawzia.

El-sayed, R. S., Sleem, W. F., El-sayed, N. M., & Ramada, F. A. (2011). Disposition of staff nurses' critical thinking and its relation to quality of their performance at Mansoura University Hospital. *Journal of American Science*, *7*(10), 388–395.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Barn, & R. J. Sternberg (Eds.), *Teaching thinking skills: Theory and practice* (pp. 9–26). Freeman and Company.

Ennis, R. H. (1987). Presidential address: A conception of rational thinking. In J. Coombs (Ed.), *Philosophy of education* (pp. 1–30). Philosophy of Education Society.

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, *18*(3), 4–10. https://doi.org/10.3102/0013189X018003004

Ennis, R. H. (1992). The degree to which critical thinking is subject specific: Clarification and needed research. In S.P. Norris (Ed.), *The generalizability of critical thinking: Multiple perspectives on an educational ideal* (pp. 21–37). Teachers College Press.

Ennis, R. (2011). Critical Thinking: Reflection and Perspective Part I. *Inquiry: Critical Thinking Across the Disciplines*, *26*(1).

Ennis, R. H. (2015). Critical thinking: A streamlined conception. In M. Davies & R. Barnett (eds.), *A handbook of critical thinking in higher education* (pp. 31–47). Palgrave Macmillan. https://doi.org/10.1057/9781137378057_2

Ennis, R. H. (2016). Definition: A three-dimensional analysis with bearing on key concepts. In Bondy, P., & Benacquista, L. (Eds.). *Argumentation, Objectivity, and Bias: Proceedings of the 11th International Conference of the Ontario Society for the Study of Argumentation* (OSSA), 18-21 May 2016. Windsor, ON: OSSA, pp. 1-19.

Ennis, R. H. (2018). Critical thinking across the curriculum: A vision. *Topoi*, *37*(1), 165–184. https://doi.org/10.1007/s11245-016-9401-4

Ennis, R. H. 2013a. "Critical Thinking across the Curriculum: The Wisdom CTAC Program." Inquiry: Critical Thinking across the Disciplines 28 (2) pp, 25–52.

Ennis, R., & Bailin, S. (1999). Critical thinking and subject specificity: Clarification and needed research Educational Researcher 28(2), 10–16.

Ennis, R.H., Millman, J., & Tomko, T.N. (1985). Cornell critical thinking tests. CA: Critical Thinking Co.

Eze, I. F., Iwu, C. G., & Dubihlela, J. (2022). Lecturers' perspectives concerning the variables that hinder critical thinking development in the classroom. *International Journal of Research in Business and Social Science*, *11*(10), 341–349. https://doi.org/10.20525/ijrbs.v11i10.2232

Facione, N. C., & Facione, P. A. (2000). *Critical thinking assessment in nursing education programs: An aggregate data analysis*. California Academic Press. https://www.insightassessment.com/var/ezflow_site/storage/pdf/BK_NursingSG_812-11-one_side.pdf

Facione, P. A. (1990a). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. California Academic Press. https://www.qcc.cuny.edu/socialsciences/ppecorino/CT-Expert-Report.pdf

Facione, P. A. (1990b). *The California critical thinking skills test--college level: Experimental validation and content validity.* California Academic Press. https://files.eric.ed.gov/fulltext/ED327549.pdf

Facione, P. A. (2015). *Critical Thinking: What it is and why it counts*. California Academic Press

Facione, P. A., & Gittens, C. A. (2016). *Critical thinking: What it is and why it counts* (2nd ed.). Measured Reasons Publications.

Fahim, M., & Eslamdoost, S. (2014). Critical thinking: Frameworks and models for teaching. *English Language Teaching*, *7*(7), 141–151. http://doi.org/10.5539/elt.v7n7p141

Fahim, M., Bagherkazemi, M., & Alemi, M. (2010). The relationship between test takers' critical thinking ability and their performance on the reading section of TOEFL. *Journal of Language Teaching & Research*, *1*(6), 83–837. https://doi.org/10.4304/JLTR.1.6.830-837

Fasko, D. (2003). Critical thinking: Origins, historical development, future directions. In D. F. (Ed.), *Critical thinking and reasoning: Current research, theory, and practice* (pp. 3–18). Hampton Press.

Fink, L. D. (2003). A self-directed guide to designing courses for significant learning.

Fischer, J. M. (1995). *The metasphysics of free will: An essay on control*. John Wiley & Sons.

Fisher, A. (2001). What critical thinking is. In J. A. Blair (Ed.), *Studies in critical thinking* (pp. 1–32). Windsor Studies in Argumentation.

Fitriani, A., Zubaidah, S., Susilo, H., & Al-Muhdhar, M.H. I (2020). The correlation between critical thinking skills and academic achievement in biology through problem-based learning-predict observe explain (PBLPOE). *International Journal of Learning and Teaching*, *6*(3), 170–176. http://dx.doi.org/10.18178/ijlt.6.3.170-176

Forbes, K. (2018). Exploring first year undergraduate students' conceptualizations of critical thinking skills. *International Journal of Teaching and Learning in Higher Education*, *30*(3), 433–442.

Foundation for Critical Thinking. (1996). Critical thinking workshop handbook. Santa Rosa, CA: Author.

Fraenkel, J. R., & Wallen. N. E. (2009). *How to design and evaluate research in education*. McGraw-Hill.

Franco, A. (2016). What do ode to joy, the Nobel peace prize, umbrellas and cartoons have in common? Why critical thinking matters and how higher education moulds. *Higher Education for the Future*, *3*(1), 108–124. http://doi.org/10.1177/2347631115610231

Franco, A. R., Costa, P. S., Butler, H. A., & Almeida, L. S. (2017). Assessment of undergraduates' real-world outcomes of critical thinking in everyday situations. *Psychological Reports*, *120*(4), 707–720. https://doi.org/10.1177/0033294117701906.

Freire, J. R. (2009). 'Local people' a critical dimension for place brands. *Journal of brand management*, *16*(7), 420–438. http://dx.doi.org/10.1057/palgrave.bm.2550097

Frye, B., Alfred, N., & Campbell, M. (1999). Use of the Watson-Glaser critical thinking appraisal with BSN students. *Nursing and Health Care Perspectives*, *20*(5), 253–255.

Fuad, J., Ardana, I. W., & Kuswandi, D. (2016, April). Increasing critical thinking skill through class debate. In Proceedings of the 1st UPI International Conference on Sociology Education (UPI ICSE 2015) (pp. 38-42). Atlantis Press. https://doi.org/10.2991/icse-15.2016.9

Fung, D. C. L., To, H., & Leung, K. (2016). The influence of collaborative group work on students' development of critical thinking: The teacher's role in facilitating group discussions. *Pedagogies: An International Journal*, *11*(2), 146–166. https://doi.org/10.1080/1554480X.2016.1159965

Gandolfi, H., & Rushton, E. (2022) Decolonial & anti-racist perspectives in teacher training & education curricula in the UK (Call for Papers) (pp. 1–4). *The Curriculum Journal. BERA.*

Ghazivakili, Z., Norouzi Nia, R., Panahi, F., Karimi, M., Gholsorkhi, H., & Ahmadi, Z. (2014). The role of critical thinking skills and learning styles of university students in their academic performance. *Journal of Advances in Medical Education & Professionalism*, *2*(3), 95–102.

Giroux, H. A. (1988). *Teachers as intellectuals: Toward a critical pedagogy of learning*. Greenwood Publishing Group.

Giroux, H. A. (2010). Rethinking education as the practice of freedom: Paulo Freire and the promise of critical pedagogy. *Policy Futures in Education*, *8*(6), 715–721. https://doi.org/10.2304/pfie.2010.8.6.715

Glaser, E. M. (1941). *An experiment in the development of critical thinking*. Teachers College, Columbia University.

Gojkov, G., Stojanović, A., & Rajić, A. G. (2015). Critical thinking of students–indicator of quality in higher education. *Procedia-Social and Behavioral Sciences*, *191*, 591–596. http://dx.doi.org/10.1016/j.sbspro.2015.04.501

Guba, E.G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (pp. 105–117). Sage Publications, Inc.

Hall, G. (2011). *Exploring English language teaching: Language in action*. Routledge. https://doi.org/10.4324/9780203827840

Halonen, J. S. (1995). Demystifying critical thinking. *Teaching of Psychology*, *22*(1), 75–81. https://doi.org/10.1207/s15328023top2201_23

Halpern, D. F. (1996). *Thought and knowledge: An introduction to critical thinking* (3rd ed.). Lawrence Erlbaum Associates.

Halpern, D. F. (1998). Teaching critical thinking for transfer across domains: Disposition, skills, structure training, and metacognitive monitoring. *American Psychologist*, *53*(4), 449–455. https://psycnet.apa.org/doi/10.1037/0003-066X.53.4.449

Halpern, D. F. (2003a). The "how" and "why" of critical thinking assessment. In D. Fasko (Ed.), *Critical thinking and reasoning: Current research, theory and practice*. Hampton Press.

Halpern, D. F. (2014). *Thought and knowledge: an introduction to critical thinking* (5th ed.). Psychology Press

Halpern, D. F. (2010). *The Halpern critical thinking assessment manual*. https://psycnet.apa.org/doi/10.1037/t10940-000

Hammersley, M. (2012). *Methodological Paradigms in Educational Research*. British Educational Research Association. BERA

Hammersley-Fletcher, L., & Hanley, C. (2016). The use of critical thinking in higher education in relation to the international student: Shifting policy and practice. *British Educational Research Journal*, *42*(6), 978–992. https://doi.org/10.1002/berj.3246

Hamzaoui, C. (2021). Algerian higher educational policy and students' acumen on the course of the current reform. *Revue Algérienne des Lettres*, 5(2), 131–141.

Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. *Journal of Economic Literature*, *46*(3), 607–668. https://doi.org/10.1257/jel.46.3.607

Harding, J. (2013). *Qualitative data analysis: From start to finish*. SAGE Publications.

Harding, J. (2019). *Qualitative data analysis: from start to finish* (2nd ed.). SAGE Publications.

Harvey, L., & Knight, P. T. (1996). *Transforming higher education*. The Society for Research into Higher Education & Open University Press.

Hasruddin, H. (2009). Memaksimalkan kemampuan berpikir kritis melalui pendekatan kontekstual. *Jurnal Tabularasa*, *6*(1), 48–60.

Haston, A. L. (2020). *Critical thinking in higher Education STEM: A qualitative faculty perspective* (Publication No. 28107774) [Doctoral dissertation, Franklin University]. ProQuest Dissertations and Theses Global.

Hidayati, Y., & Sinaga, P. (2019). The profile of critical thinking skills students on science learning. *Journal of Physics: Conference Series*, *1402*(4), 1–5. https://doi.org/10.1088/1742-6596/1402/4/044075

Hitchcock, D. (2004). The effectiveness of computer-assisted instruction in critical thinking. *Informal Logic*, *24*(3), 183–218. https://doi.org/10.22329/il.v24i3.2145

Hitchcock, D. (2015). The effectiveness of instruction in critical thinking. In M. Davies & R. Barnett (eds.), *The Palgrave handbook of critical thinking in higher education* (pp. 283–294). Palgrave Macmillan. https://doi.org/10.1057/9781137378057_18

Holliday, A. R. (2002). *Doing and writing qualitative research*. Sage Publications.

Hyder, I., & Bhamani, S. (2016). Bloom's Taxonomy (cognitive domain) in higher education settings: Reflection brief. *Journal of Education and Educational Development*, *3*(2). 288–300.

Inhelder, B., & Piaget, J. (1958). *The growth of logical thinking from childhood to adolescence: An essay on the construction of formal operational structures* (Vol. 22). Basic Books. https://doi.org/10.1037/10034-000

Ikuenobe, P. (2001). Teaching and assessing critical thinking abilities as outcomes in an informal logic course. *Teaching in Higher Education*, *6*(1), 19–35. https://doi.org/10.1080/13562510020029572

Iman, J. N. (2017). Debate instruction in EFL classroom: Impacts on the critical thinking and speaking skill. *International Journal of Instruction*, *10*(4), 87–108. https://doi.org/10.12973/iji.2017.1046a

Indrašienė, V., Jegelevičienė, V., Merfeldaitė, O., Penkauskienė, D., Pivorienė, J., Railienė, A., & Valavičienė, N. (2019). What critical thinking and for what? *Social Welfare Interdisciplinary Approach*, *9*(1), 24–38. https://doi.org/10.21277/sw.v1i9.460

Indrašienė, V., Jegelevičienė, V., Merfeldaitė, O., Penkauskienė, D., Pivorienė, J., Railienė, A., Sadauskas, J., & Valavičienė, N., (2021). Linking critical thinking and knowledge management: A conceptual analysis. *Sustainability*, *13*(3),1–17. https://doi.org/10.3390/su13031476

Jahng, N. (2012). A systematic review of small-group communication in post-secondary online courses. *Journal of Open, Flexible and Distance Learning, 16*(2), 26-40. Retrieved from: http://journals.akoaotearoa.ac.nz/index.php/JOFDL/index

Jarwan, F. (2005). Teaching thinking: Definition and applications. *Dar Al-fkir*, 204–206.

Jawoniyi, O. (2015). Religious education, critical thinking, rational autonomy, and the child's right to an open future. *Religion & Education*, *42*(1), 34–53. https://doi.org/10.1080/15507394.2013.859960

Joe, K., Raben, F., & Phillips, A. (2016). The ethical issues of survey and market research. *The SAGE handbook of survey methodology*, 77-86.

Joffe, H. (2012). Thematic analysis. In D. Harper & A. Thompson (Eds.), Q*ualitative research methods in mental health and psychotherapy: A guide for students and practitioners* (pp. 209–223). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781119973249.ch15

Jones, J. M. (2014). Discussion group effectiveness is related to critical thinking through interest and engagement. *Psychology Learning & Teaching*, *13*(1), 12–24. https://doi.org/10.2304/plat.2014.13.1.12

Kalonji, G. (2005). Capturing the imagination: High-priority reforms for engineering educators. In: National Academy of Engineering (ed.), *Educating the engineer of 2020: Adapting engineering education to the new century*. National Academies Press, 146–150.

Kanik, F. (2010). *An assessment of teachers' conceptions of critical thinking and practices for critical thinking development at seventh grade level* [Doctoral dissertation, Middle East Technical University]. Open METU. index.pdf (metu.edu.tr)

Kaplan, L. D. (1991). Teaching intellectual autonomy: The failure of the critical thinking movement. *Educational Theory*, *41*(4), 361–370. https://doi.org/10.1111/j.1741-5446.1991.00361.x

Karalis, T. (2010). Situated and transformative learning: Exploring the potential of critical reflection to enhance organizational knowledge. *Development and Learning in Organization*, *24*(1), 17–20. https://doi.org/10.1108/14777281011010479

Karalis, T., Sotiropoulos, L., & Kampeza, M. (2007). La contribution de l'éducation tout au long de la vie et de l'anthropologie dans la préparation professionnelle des enseignants : Réflexions théoriques. Skholê, hors série, *1*, 149–155.

Ketabi, S., Zabihi, R., & Ghadiri, M. (2013). Critical thinking across the ELT curriculum: A mixed methods approach to analysing L2 teachers' attitudes towards critical thinking instruction. *International Journal of Research Studies in Education*, *2*(3), 15–24. http://doi.org/10.5861/ijrse.2012.189

Kettler, T. (2014). Critical thinking skills among elementary school students: Comparing identified gifted and general education student performance. *Gifted Child Quarterly*, *58*(2), 127–136. http://doi.org/10.1177/0016986214522508

Khalid, L., Bucheerei, J., & Issah, M. (2021). Pre-service teachers' perceptions of barriers to promoting critical thinking skills in the classroom. *SAGE Open*, *11*(3), 1–9. http://dx.doi.org/10.1177/21582440211036094

Khan, A., Khan, S., & Turi, S. (2019). An exploratory study focusing on teaching and learning practices at the tertiary level in Pakistan: A case study of a public sector university. International Journal of Educational Development, 65, 106-114.

Khatib, M., & Shakouri, N. (2013). Literature stance in developing critical thinking: A pedagogical look. *International Journal of Research Studies in Language Learning*, *2*(4), 101–108. https://doi.org/10.5861/ijrsll.2012.154

Khodadady, E., Shirmohammadi, S., & Talebi, F. (2011). Brainstorming and its effect on critical thinking and speaking. *The Iranian EFL Journal*, *7*(1), 51–66.

King, G. (1998). Unifying political methodology: The likelihood theory of statistical inference. University Michigan Press. https://doi.org/10.3998/mpub.23784

King, G. (1995). Replication, replication. *PS: Political Science & Politics*, *28*(3), 444–452. https://doi.org/10.2307/420301

King, N. (2004). Using templates in the thematic analysis. In C. Cassell & G. Symon (eds.), *Essential guide to qualitative methods in organizational research* (pp. 256–270). SAGE Publications Ltd. https://doi.org/10.4135/9781446280119

Kotb, S. (1980). *Khasais Tasawor Islami wa Mokawimatoho*. Dar Echorouk.

knight, J. (2008). The Internationalization of higher education in the 21st century: New realities and complexities, *Higher education in turmoil, brill sense* (pp. 1–18). https://doi.org/10.1163/9789087905224_002

Kruse, O. (2011), Kritično razmišljanje u znaku Bologne: Retorika i realnost [Critical thinking in the sign of Bologna: rhetoric and Reality]. In: M. Rumller, Neue impulse in Hochschuldidaktik, Berlin.

Ku, K.Y. L. (2009). Assessing students' critical thinking performance: Urging for measurements using multi-response format. *Thinking Skills and Creativity*, *4*(1), 70–76. https://doi.org/10.1016/j.tsc.2009.02.001

Kuhn, D. (1999). The development of critical thinking skills. *Educational Researcher*, *28*(2), 16-46. https://doi.org/10.3102/0013189X028002016

Kvale, S. (2009). Doing interviews. In U. Flick (ed.), *The SAGE qualitative research kit*. Sage Publications, Ltd. https://doi.org/10.4135/9781849208963

Laabidi, Y. (2019). Examining teachers' perceived barriers to the integration of critical thinking in Moroccan high schools. *ASIAN TEFL Journal of Language Teaching and Applied Linguistics*, *4*(2), 83–95. http://dx.doi.org/10.21462/asiantefl.v4i2.75

Lai, E. R. (2011). Critical thinking: A literature review. *Pearson's Research Reports*, *6*(1), 40–41.

Lin, M., Preston, A., Kharruga, A., & Kong, Z. (2016). Making L2 learners' reasoning skills visible: The potential of computer supported collaborative learning environments. *Thinking Skills and Creativity*, *22*, 303–322. https://doi.org/10.1016/j.tsc.2016.06.004

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications Inc.

Lincoln, D., & Kearney, M. L. (2019). Promoting critical thinking in higher education. *Studies in Higher Education*, *44*(5), 799–800. https://doi.org/10.1080/03075079.2019.1586322

Lipman, M. (1988). Critical thinking-what can it be? *Educational Leadership*, *46*(1), 38–43.

Lipman, M. (2003). *Thinking in Education* (2nd ed). Cambridge University Press. https://psycnet.apa.org/doi/10.1017/CBO9780511840272

Littlewood, W. (1999) Defining and developing autonomy in East Asian contexts. *Applied*

Linguistics, 20(1), 71–94.

Liu, O. L., Frankel, L., & Roohr, K. C. (2014). Assessing critical thinking in higher education: Current state and directions for next-generation assessment. *ETS Research Report Series*, *2014*(1), 1-23.

Lobe, B., Morgan, D., & Hoffman, K. A. (2020). Qualitative data collection in an era of social distancing. *International journal of qualitative methods*, *19*, 1609406920937875.

Mahmoudi, A. D., Khoshnood, A., & Babaei, A. (2014). Paulo Freire's critical pedagogy and its implications in curriculum planning. *Journal of Education and Practice*, *5*(14), 86–91.

Majid, M. A. A., Othman, M., Mohamad, S. F., Lim, S. A. H., & Yusof, A. (2017). Piloting for interviews in qualitative research: Operationalization and lessons learnt. *International Journal of Academic Research in Business and Social Sciences*, *7*(4), 1073-1080.

Malik, M. M. (2017). Islamic approach to critical thinking. https://doi.org/10.17605/OSF.IO%2FZC6YU

Mami, N. A. (2013). Teaching English under the LMD reform: the Algerian experience. *International Journal of Educational and Pedagogical Sciences*, *7*(4), 910–913.

Manalo, E., & Bartlett-Trafford, J. (2004). *Thinking to thesis: A guide to graduate success at all levels*. Pearson Longman.

Marin, L. M., and Halpern, D. F. (2011). Pedagogy for developing critical thinking in adolescents: Explicit instruction produces greatest gains. *Thinking Skills and Creativity*, *6*(1), 1–13. https://doi.org/10.1016/j.tsc.2010.08.002

McArthur, J. (2022) Critical theory in a decolonial age. *Educational Philosophy and Theory, 54*(10), 1681-1692, DOI: 10.1080/00131857.2021.1934670

McCombes, S. (2023). How to write a Literature Review/Guide, Examples and Templates. https://www.scrbbr.com

McPeck, J. (1981). *Critical thinking and education*. Martin's Press. https://doi.org/10.4324/9781315463698

McPeck, J. E. (1990). *Teaching critical thinking: Dialogue and dialectic*. Routledge. https://doi.org/10.4324/9781315526492

McPeck, J. E. (1992). Thoughts on subject specificity. In S. Norris (ed.), *The generalizability of critical thinking: Multiple perspectives on an educational ideal* (pp. 21–37). Teachers College Press.

Megnounif, A. (2010, November 23–25). *The engineering education in Algeria in the new system: "LMD" the case study of the faculty of engineering* [Paper presentation]. 5th International Forum on Engineering Education (IFEE2010), University of Sharjah, United Arab Emirates.

Melouah, A. (2017). Cultural influences on critical thinking development in Algerian higher education EFL classes. *EDULEARN17 Proceedings*, 9864-9874 https://doi.org/10.21125/edulearn.2017.0868

Melouk, M. (2013). The LMD system: A major issue in higher education reform. *Al-Hiwar Al-moutawasiti*, *4*(1), 5–91.

Metatla, O. (2016, February 16). Higher education reform in Algeria: Reading between the lines. *Open Democracy*. Higher education reform in Algeria: reading between the lines | openDemocracy | education-in-algeria.pdf (businessbrother.fr)

Meyer, J.-B., Benguerna, M., Pellegrini, C., Alazali, M., & Benbouzid, K. (2022). Higher education in North Africa: Comparative evolution of Algeria and Morocco. *Journal of North African Studies*, *28*(1), 100–117. http://dx.doi.org/10.1080/13629387.2022.2028259

Meyers, N. M., & Nulty, D. D. (2009). How to use (five) curriculum design principles to align authentic learning environments, assessment, students' approaches to thinking and learning outcomes. *Assessment & Evaluation in Higher Education*, *34*(5), 565–577. https://doi.org/10.1080/02602930802226502

Meziane, M., & Mahi, B. (2010). The LMD higher education system in the Maghreb countries: The example of Algeria. Towards an Arab higher education space: International challenges and societal responsibilities, 267.

Mezirow, J. (2006). Transformative learning as discourse. *Journal of Transformative Education*, *1*(1), 58–63. https://doi.org/10.1177/1541344603252172

Mezouar. A, (2012). This is the Algerian university reality (Trans). Alwatan Voice Journal. Retrieved from https://pulpit.alwatanvoice.com/content/print/261517

Miliani, M. (2011). Between enduring hardships and fleeting ideals. In R. G. Sultana (Ed.), *Educators of the Mediterranean..... Up close and personal: Critical voices from South Europe and the MENA region* (pp. 87-98). Sense Publishers. https://doi.org/10.1007/978-94-6091-681-6_8

Miliani, M. (2012). Teaching in higher education institutions in Algeria: A clash of pedagogies? *International Journal of Pedagogies and Learning*, *7*(3), pp. 218–226. https://doi.org/10.5172/ijpl.2012.7.3.218

Ministry of higher education and scientific research (MESRS): https://www.mesrs.dz/ Accessed to on January 20th, 2023.

Mockovxxak, W. P. (2016, November). *Assessing the reliability of conversational interviewing*. U.S. Bureau of Labor Statistics. (bls.gov)

Moneva, J. C., Miralles, R. G., & Rosell, J. Z. (2020). Problem solving attitude and critical thinking ability of students. *International Journal of Research*, 8(1), 138–149. https://doi.org/10.29121/granthaalayah.v8.i1.2020.261

Moon, J. A. (2008). Critical thinking: An exploration of theory and practice. Routledge. https://doi.org/10.4324/9780203944882

Moore, T. (2004). The critical thinking debate: How general are general thinking skills? *Higher Education Research & Development*, *23*(1),3–18. https://doi.org/10.1080/0729436032000168469

Moore, T. (2011). Critical thinking and disciplinary thinking: A continuing debate. *Higher Education Research and Development*, *30*(3), 261–74. https://doi.org/10.1080/07294360.2010.501328

Moore, T. (2013). Critical thinking: Seven definitions in search of a concept. *Studies in Higher Education*, *38*(4), 506–522. https://doi.org/10.1080/03075079.2011.586995

Moore, T. (2017). On the teaching of critical thinking in English for academic purposes. In R. Breeze & C. S. Guinda (Eds.), Essential competencies for English-medium university teaching: Vol. 27. *Educational Linguist* (pp.19–35). https://doi.org/10.1007/978-3-319-40956-6_2

Mulcahy, Cara M. "Chapter 1: The Tangled Web We Weave: Critical Literacy and Critical Thinking." Counterpoints 326 (2008): 15–27. http://www.jstor.org/stable/42980102

Nair, G. G., & Stamler, L. L. (2013). A conceptual framework for developing a Critical Thinking Self-Assessment Scale. *Journal of Nursing Education*, *52*(3), 131–138. https://doi.org/10.3928/01484834-20120215-01

Nassaji, H. (2020). Assessing the effectiveness of interactional feedback for L2 acquisition: Issues and challenges. *Language Teaching*, *53*(1), 3–28. https://doi.org/10.1017/S0261444819000375

Nieto, A. M., & Saiz, C. (2014). Skills and dispositions of critical thinking: Are they sufficient? *Anales de Psicología*, *27*(1), 202–209.

Nentl, N., & Zietlow, R. (2008). Using Bloom's taxonomy to teach critical thinking skills to business students. *College & Undergraduate Libraries*, *15*(1-2), 159–172. https://doi.org/10.1080/10691310802177135

Niu, L., Behar-Horenstein, L. S., & Garvan, C. W. (2013). Do instructional interventions influence college students' critical thinking skills? A meta-analysis. *Educational Research Review*, *9*, 114–128. https://doi.org/10.1016/j.edurev.2012.12.002

Noddings, N. (2005). *The challenge to care in schools: An alternative approach to education* (2nd ed.). Teachers College Press.

Nor H. M., & Sihes, A. J. (2021). Critical thinking skills in education: A systematic literature review. *International Journal of Academic Research in Business and Social Sciences*, *11*(11), 198–201. https://doi.org/10.6007/ijarbss/v11-i11/11529

Norris, S. P., & Ennis, R. H. (1989). Evaluating critical thinking. The practitioners' guide to teaching thinking series. Critical Thinking Press and Software,

Noui, R. (2020). Higher education between massification and quality. *Higher Education Evaluation and Development*, *14*(2), 93–103. https://doi.org/10.1108/heed-04-2020-0008

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1). https://doi.org/10.1177/1609406917733847

Ojewole, F., & Thompson, C. (2014). Assessment of critical thinking dispositions on nursing students in Southwestern Nigeria. *International Journal of Research in Applied, Natural and Social Sciences*, *2*(3), 7–16.

Olivares, S. Saiz, C., & Rivas, S. F. (2013). Encouragement for thinking critically. *Electronic Journal of Research in Educational Psychology*, *11*(30), 367–394. https://doi.org/10.14204/ejrep.30.12168

Olivares, S. L., & Heredia Escorza, Y. (2012). Desarrollo del pensamiento crítico en ambientes de aprendizaje basado en problemas en estudiantes de educación superior. Revista Mexicana de Investigación Educativa, 17(54), 759–778.

Onosko, J. J. (1991). Barriers to the promotion of higher-order thinking in social studies. *Theory and Research in Social Education*, *19*(4), 341–366. https://doi.org/10.1080/00933104.1991.10505646

Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of nursing scholarship*, *33*(1), 93-96.

Ouahani, N. E., & Hiba, B. (2023). Critical thinking practice in Moroccan higher education: An evaluation. *International Journal of Linguistics, Literature and Translation*, *6*(1), 91–97. https://doi.org/10.32996/ijllt.2023.6.1.12

Ouslimani, N., & Aboubou, H. (2021). Teachers' perceptions of critical thinking and the impact they have on language teaching. *Social and Human Sciences Review*, *22*(1), 543–558

Ozkan-Akan, S. (2003). *Teachers' perceptions of constraints on improving students thinking in high schools* [Unpublished master's thesis]. Middle East Technical University.

Patton, M. Q. (2014). *Qualitative research and evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications, Inc.

Paul, R. (1981). Teaching critical thinking in the strong sense: A focus on Self-Deception, World views, and a Dialectical Mode of Analysis. In Paul, R. (ed) (1994) Critical Thinking: What

Every Person Needs to Survive in a Rapidly Changing World. Founda- tion for Critical Thinking Press.

Paul, R. W. (1993). *Critical thinking: What every person needs to survive in a rapidly changing World*. Foundation for Critical Thinking.

Paul, R., & Elder, L. (2007). *A guide for educators to critical thinking competency standards*. Foundation for Critical Thinking.

Paul, R., & Elder, L. (2020). *The miniature guide to critical thinking concepts and tools* (8th ed.). Rowman & Littlefield.

Pederson, C. (1992). Effects of structured controversy on students' perceptions of their skills in discussing controversial issues. *Journal of Nursing Education*, *31*(3), 101–106. https://doi.org/10.3928/0148-4834-19920301-04

Penkauskienė, D., Railienė, A., & Cruz, G. (2019). How is critical thinking valued by the labour market? Employer perspectives from different European countries. *Studies in Higher Education*, *44*(5), 804–815. https://doi.org/10.1080/03075079.2019.1586323

Percy, W. H., Kostere, K., & Kostere, S. (2015). Generic Qualitative Research in Psychology. *The Qualitative Report, 20*(2), 76-85. Retrieved from http://nsuworks.nova.edu/tqr/vol20/iss2/7

Perkins, C., & Murphy, E. (2006). Identifying and measuring individual engagement in critical thinking in online discussions: An exploratory case study. *Educational Technology & Society*, *9*(1), 298–307.

Pnevmatikos, D., Christodoulou, P., Georgiadou, T., & Lithoxoidou, A. (2023). Undergraduate students' conceptualization of critical thinking and their ideas for critical thinking acquisition. *Education Sciences*, *13*(4), 1–19. http://dx.doi.org/10.3390/educsci13040416

Practical guide of the BMD system, (2011). Ministry of higher education and scientific research: Algeria.

Rademaekers, J. K., & Detweiler, L. (2019). Performing critical thinking in written language: Defining critical thinking from the assessor's view. *Double Helix*, *7*, 1–19. http://dx.doi.org/10.37514/DBH-J.2019.7.1.02

Rahman, M. S. (2020). *The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "testing and assessment" research:* A literature review.

Raikou, N., Liodaki, N., & Karalis, T. (2016). Critical reflection and dialogue on pre-service teachers' practicum. *The Role, Nature and Difficulties of Dialogue in Transformative Learning Proceedings*, 307–316.

Reece, G. (2002). Critical thinking and transferability: A review of the literature. Tersedia:

Reed, J. H. (1998). *Effect of a model for critical thinking on student achievement in primary source document analysis and interpretation, argumentative reasoning, critical thinking dispositions, and history content in a community college history course* (Publication No. 9911510.) [Doctoral dissertation, South Florida University]. ProQuest Dissertations and Theses Global.

Reed, J. H., & Kromrey, J. D. (2001). Teaching critical thinking in a Community College History Course: Empirical evidence from infusing Paul's model. *College Student Journal*, *35*(2), 201–216.

Reynolds, S. W. (2016). *Determining and exploring teachers' perceptions on the barriers to teaching critical thinking in the classroom: A survey study* [Doctoral dissertation, Texas Tech University]. TTU DSpace. http://hdl.handle.net/2346/68118

Ricci, F. A., & Su, A. (2013). Cultural conditioning: influences on critical thinking. *Journal of the Worldwide Forum on Education and Culture*, *5*(1), p. 47.

Rimiene, V. (2002). Assessing and developing students' critical thinking. *Psychology Learning & Teaching*, *2*(1), 17–22. https://doi.org/10.2304/plat.2002.2.1.17

Robson, C. (2011). Real world research (3rd ed.) Chichester: Wiley Rochester,

Rolón, N. I. (2014). Pensamiento crítico y docencia. Breves reflexiones de su aporte y riqueza. Didac, 64,18–23.

Rose, J., & Johnson, C. W. (2020). Contextualizing reliability and validity in qualitative research: Toward more rigorous and trustworthy qualitative social science in leisure research. *Journal of leisure research*, *51*(4), 432–451. https://doi.org/10.1080/00222216.2020.1722042

Roy, A., & Macchiette, B. (2005). Debating the issues: A tool for augmenting critical thinking skills of marketing students. *Journal of Marketing Education*, *27*(3), 264–276. https://doi.org/10.1177/0273475305280533

Sameh, S. (2017). Higher education and scientific research sector in Algeria: What kind of challenges and changes that are required for a better system? [Special issue] *European Scientific Journal*, 33–43.

Sanders, M., & Moulenbelt, J. (2011). Defining critical thinking: How far have we come? *Inquiry: Critical Thinking Across the Disciplines*, *26*(1), 38–46. https://doi.org/10.5840/inquiryctnews20112616

Sardiman, A. M. (2014). Interaksi dan motivasi belajar mengajar. Jakarta: PT Raja Grafindo Persada.

Sarnou, H., Koç, S., Houcine, T. S., & Bouhadiba, F. (2012). LMD new system in the Algerian university. *Arab World English Journal (AWEJ)*, *3*(4), 179–194.

Schendel, R. (2015). Critical thinking at Rwanda's public universities: Emerging evidence of a crucial development priority. *International Journal of Educational Development*, *42*, 96–105. https://doi.org/10.1016/j.ijedudev.2016.01.003

Schendel, R. (2016). Adapting, not adopting: Barriers affecting teaching for critical thinking at two Rwandan universities. *Comparative Education Review*, *60*(3), 549–570. http://dx.doi.org/10.1086/687035

Serrano, A. Y., Zubizarreta Estévez, M., & Castillo Mayedo, J. A. (2005). Estrategia para fomentar el pensamiento crítico en estudiantes de Licenciatura en Enfermería. Educación Médica Superior, 19(4), Retrieved from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-21412005000400005

Shank, G., & Brown, L. (2007). *Exploring educational research literacy.* Routledge. https://doi.org/10.4324/9780203943786

Shell, R. (2001). Perceived barriers to teaching for critical thinking by BSN nursing faculty. *Nursing and Health Care Perspectives*, *22*(6), 286–292. https://pubmed.ncbi.nlm.nih.gov/16370252

Shikhani, S., & Fahim, M. (2011). Enhancing critical thinking in foreign language learners. *Procedia-Social and Behavioral Sciences*, *29*, 111–115. https://doi.org/10.1016/j.sbspro.2011.11.214

Sibold, W. (2017). *Enhancing critical thinking through class discussion: A guide for using discussion-based pedagogy*. Taylor Institute for Teaching and Learning, University of Calgary.

Siles-González, J., & Solano-Ruiz, C. (2016). Self-assessment, reflection on practice and critical thinking in nursing students. *Nurse Education Today*, *45*, 132–137. https://doi.org/10.1016/j.nedt.2016.07.005

Silverman, D. (2019). *Interpreting qualitative data* (6th ed.). SAGE Publication Ltd.

Smith, E. R. & Tyler, R. W. (1942). *Appraising and recording student progress*. Harper.

Smith, L. (2002*). Reconceptualizing context from a situated perspective: Teacher beliefs and the activity of teaching within the context of science reform* (Publication No. 3058264) [Doctoral dissertation, Utah University]. ProQuest Dissertations and Theses Global.

Smith, J. K. (1993). *After the demise of empiricism: The problem of judging social and education inquiry*.

Smith, M. K. (2002). Paulo Freire: Dialogue, praxis and education. Infed.org.

Smith, B., and A. Sparkes. 2016. "Interviews: Qualitative Interviewing in the Sport and Exercise Sciences." In Routledge Handbook of Qualitative Research in Sport and Exercise, edited by B. Smith and A. Sparkes, 103–123. New York: Routledge

Solon, T. (2007). Generic critical thinking infusion and course content learning in introductory psychology. *Journal of Instructional Psychology*, *34*(2), 95–109. https://eric.ed.gov/?id=EJ774169

Soozandehfar, S. M. A., & Adeli, M. R. (2016). A critical appraisal of Bloom's taxonomy. *American Research Journal of English and Literature (ARJEL)*, *2*(9). 1–10. https://doi.org/10.21694/2378-9026.16014

Sosu, E. M. (2013). The development and psychometric validation of a Critical Thinking Disposition Scale. *Thinking skills and creativity*, *9*, 107–119. https://doi.org/10.1016/j.tsc.2012.09.002

Souleh, S. (2017). High education and scientific research sector in Algeria [Special issue]. *European Scientific Journal*. 33–43.

Stahl, N. A., & King, J. R. (2020). Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education*, *44*(1), 26–29.

Stedman, N. L. P., & Adams, B. L. (2012). Identifying faculty's knowledge of critical thinking concepts and perceptions of critical thinking instruction in higher education. *NACTA Journal*, *56*(2), 9–14.

Sternberg, R.J.; Halpern, D.F. (2020). *Critical thinking in psychology*. Cambridge University Press.

Sundberg, J. (2009). Eurocentrism. In International Encyclopedia of Human Geography (2nd Edition), edited by A. Kobayashi, 315-324.

Taherdoost, H. (2022). What are different research approaches? Comprehensive Review of Qualitative, quantitative, and mixed method research, their applications, types, and limitations. *Journal of Management Science & Engineering Research*, *5*(1), pp.53-63. https://hal.science/hal-03741840

Talavera, I. (2016). The acquisition of scientific knowledge via critical thinking: A philosophical approach to science education. *Forum on Public Policy Online: Journal of the Oxford Round Table*, 2, 1–66.

Tan, C. (2017). Teaching critical thinking: Cultural challenges and strategies in Singapore. *British educational research journal, 43*(5), 988-1002 https://doi.org/10.1002/berj.3295

Tanty, H., Fernando, C., Valencia, J., & Justin, V. (2022). Critical thinking and problem solving among students. *Business Economic, Communication, and Social Sciences Journal (BECOSS)*, *4*(3), 173–180. https://doi.org/10.21512/becossjournal.v4i3.8633

Ten Dam, G., & Volman, M. (2004). Critical thinking as citizenship competence. *Learning and Instruction*, *14*(4), 259–379. https://doi.org/10.1016/j.learninstruc.2004.01.005

Tenías Padrón, M. J. (2013). Pensamiento Crítico en la Universidad de la Postmodernidad (Critical Thinking in Postmodern University). Trilogía Ciencia Tecnología Sociedad, 5(8).

European Commission, European Education and Culture Executive Agency, Eurostat, Eurydice, Crosier, D., Horvath, A., & Kerpanova, V. (2012). *The European higher education area in 2012 :Bologna Process implementation report*.

Education, Audiovisual and Culture Executive Agency (EACEA P9 Eurydice). https://data.europa.eu/doi/10.2797/81203

Torres, I. C., Carranza Alcántar, M. R., De la Torre Barba, S., Jiménez Padilla, A. A., & Baltazar Díaz, E. G. (2010). Propuesta metodológica para promover el pensamiento crítico y aprendizaje autónomo en modalidades mixtas. Retrieved fromhttps://www.researchgate.net/profile/Maria_Alcantar/publication/317587791

Trouzin, M. (2012). *Al idara el madrasia wa tatbik elsoloukia bilmadaris el ibtidiya wa el motawasitat wa ethanawiyat*. Telemsan. Konouz llintaj wa inachr wa tawzia.

Tsui, L. (2002). fostering critical thinking through effective pedagogy: Evidence from four institutional case studies. *The Journal of Higher Education, 73*(6), 740–63. https://doi.org/10.1353/jhe.2002.0056

Tuzlukova, V. & Prabhukanth, K. U. (2018). Critical thinking and problem-solving skills: English for science foundation program students' perspectives. *Radov Collector Filozofskog facultet in Pristina, 48*(3), 37-60. https://doi.org/10.5937/ZRFFP48-18664

Oum El Bouaghi University. (2023*). Presentation of university*. https://www.univ-oeb.dz/

Yusuf, N.M., & Shah, P.M. (2018, December 17–18). Teachers' perception on barriers of teaching critical thinking in ESL classroom: A survey. *12th International Conference on Language, Education and Innovation Proceedings, 66–80*.

Utami, B., Saputro, S., Ashadi, A., Masykuri, M., & Widoretno, S. (2017). Critical thinking skills profile of high school students in learning chemistry. *International Journal of Science and Applied Science: Conference Series, 1*(2), 124–130. https://dx.doi.org/10.20961/ijsascs.v1i2.5134

Van Erp, N. L. (2008). Critical thinking in online graduate courses: A phenomenological study [Doctoral dissertation, Capella University].

Vandermensbrugghe, J. (2004) The Unbearable Vagueness of Critical Thinking in the context of the Anglo-Saxonisation of Education. *International Education Journal*, *5*(3), 417–422.

Wales, C. E., & Nardi, A. H. (1984). The paradox of critical thinking. Center for Guided Design.

Walker, P., & Finney, N. (2006) Skill development and critical thinking in education, *Teaching in Higher Education*, *4*(4), 531–547. https://doi.org/10.1080/1356251990040409

Watson, G., & Glaser, E.M. (1980). *Watson-Glaser critical thinking appraisal*. Psychological Corporation.

White, B. (2011). *Mapping your thesis: the comprehensive manual of theory and techniques for master's and doctoral research*. Acer Press.

Wittgenstein, L. (1958). *Philosophical investigations* (2nd ed). Basil Blackwell.

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Sage.

Zaghib, S., & Tankout, W. (2013). Al-taalim al-ali wa al-tanmiya bayna al-iktirab al-nadhari wa al-wakia: Halet Al-djazair. *Al-djazair: Ishkaliyet Alwakia wa Roua Al-moustakbel* (pp. 55–95). Markez Diraset Al-wihda Al-arabiya.

Zebbouchi, H., & Bacher, A. (2021). EFL students' attitudes and practices of close reading strategies for monitoring comprehension and promoting critical thinking: A case of two first-year groups at Oum-El-Bouaghi University. *Applied Linguistics,* 5(2), 154-169.

Zhaffar, N. M., Hamzah, M. I., Razak, K. A., & Abdullah, W. A. A. W. (2016). Ke arah guru Pendidikan Islam sebagai pemikir kritis. Sains Humanika, 8(3).

Zumbrunn, S., Tadlock, J., & Roberts, E. D. (2011). *Encouraging self-regulated learning in the classroom: A review of Literature*. Metropolitan Educational Research Consortium (MERC), Virginia Commonwealth University. http://dx.doi.org/10.13140/RG.2.1.3358.6084

Zwaagsrta, M. (2016, November 20). There is no critical thinking without a base of knowledge. *The Afro News.* https://www.theafronews.com/theres-no-critical-thinking-without-a-base-of-knowledge/

Appendices

Appendix A: Participant information sheet

Project title: Critical Thinking across the disciplines at the Algerian University

Researcher(s):AMIRA CHERGUI

Department: School of Education

Contact details: amira.chergui@durahm.ac.uk

You are invited to take part in a study that I am conducting as part of my PhD project at Durham University.

This study has received ethical approval from the school of education ethics committee at Durham University.

Before you decide whether to agree to take part it is important for you to understand the purpose of the research and what is involved as a participant. Please read the following information carefully. Please get in contact if there is anything that is not clear or if you would like more information.

You can check the rights and responsibilities of anyone taking part in Durham University research; they are set out in our 'Participants Charter': https://www.dur.ac.uk/research.innovation/governance/ethics/considerations/people/charter/

What is the purpose of the study?

The aim of this study is to investigate teachers' understanding of critical thinking and how they support its development across the disciplines in the Algerian Higher education context. The study will be completed by the end of 2023.

Why have I been invited to take part?

You have been invited because the researcher needs some teachers' views about critical thinking in the Algerian context , how they conceptualize it and how they believe they support its development in their specific domains.

Do I have to take part?

Your participation is voluntary, and you do not have to agree to take part. If you do agree to take part, you can withdraw at any time, without giving a reason. [Your rights in relation to withdrawing any data that is identifiable to you are explained in the accompanying Privacy Notice].

What will happen to me if I take part?

If you agree to take part in the study, you will be asked some questions that the researcher expects full answers for with some explanation; The interview will take 30 to 60 minutes maximum and will be held online at a time suitable for you.

You can absolutely omit any questions that you do not wish to answer.

Are there any potential risks involved?

The interview is designed in a way to make the respondent comfortable, so potential risks or discomforts should not be involved.

- There is no expected benefit to the participant for taking part of the research, but your collaboration and help is so much appreciated.

Will my data be kept confidential?

All information obtained during the study will be kept confidential. If the data is published it will be entirely anonymous and will not be identifiable as yours. If willing to publish identifiable data as using direct quotes from interviews, your permission will be needed for sure. Full details are included in the accompanying Privacy Notice.

What will happen to the results of the project?

No personal data will be shared, however anonymised (i.e. not identifiable) data may be used in publications, reports, presentations, web pages and other research outputs. At the end of the project, anonymised data may be archived and shared with others for legitimate research purposes.

All research data and records needed to validate the research findings will be stored for [10] years after the end of the PhD project. (10 years is the standard under the University's data management policy).

Thesis expected to be deposited in Durham e-Theses:

Durham University is committed to sharing the results of its world-class research for public benefit. As part of this commitment the University has established an online repository for all Durham University Higher Degree theses which provides access to the full text of freely available theses. The study in which you are invited to participate will be written up as a thesis. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The thesis will be published open access.

Who do I contact if I have any questions or concerns about this study?

If you have any further questions or concerns about this study, please speak to the researcher. If you remain unhappy or wish to make a formal complaint, please submit a complaint via the University's Complaints Process.

Thank you for reading this information and considering taking part in this study.

Appendix B Declaration of informed consent

Project title: Critical thinking across the disciplines at the Algerian University

Researcher(s): CHERGUI AMIRA
Department: School of Education
Contact details: amira.chergui@durham.ac.uk

This form is to confirm that you understand what the purposes of the project, what is involved and that you are happy to take part. Please initial each box to indicate your agreement:

I confirm that I have read and understand the information sheet dated [dd/mm/yy] and the privacy notice for the above project.	•
• I have had sufficient time to consider the information and ask any questions I might have, and I am satisfied with the answers I have been given.	•
• I understand who will have access to personal data provided, how the data will be stored and what will happen to the data at the end of the project.	•
• I agree to take part in the above project.	•
• I consent to being audio recorded and understand how recordings will be used in research outputs.	•
• I understand that my words from the interview may be quoted in publications, reports, and other research outputs and my name will be kept anonymous.	•
• I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason. •	•

- Participant's Signature_____ Date_____
- (NAME IN BLOCK LETTERS)_____
- Researcher's Signature_____ Date_____
- (NAME IN BLOCK LETTERS)_____

Appendix C Privacy notice

PART 1 – GENERIC PRIVACY NOTICE

Durham University has a responsibility under data protection legislation to provide individuals with information about how we process their personal data. We do this in a number of ways, one of which is the publication of privacy notices. Organisations variously call them a privacy statement, a fair processing notice or a privacy policy.

To ensure that we process your personal data fairly and lawfully we are required to inform you:

- Why we collect your data
- How it will be used
- Who it will be shared with

We will also explain what rights you have to control how we use your information and how to inform us about your wishes. Durham University will make the Privacy Notice available via the website and at the point we request personal data.

Our privacy notices comprise two parts – a generic part (i.e., common to all of our privacy notices) and a part tailored to the specific processing activity being undertaken.

Data Controller

The Data Controller is Durham University. If you would like more information about how the University uses your personal data, please see the University's Information Governance webpages or contact Information Governance Unit:

Telephone: (0191 33) 46246 or 46103

E-mail: information.governance@durham.ac.uk

Information Governance Unit also coordinate response to individuals asserting their rights under the legislation. Please contact the Unit in the first instance.

Data Protection Officer

The Data Protection Officer is responsible for advising the University on compliance with Data Protection legislation and monitoring its performance against it. If you have any concerns regarding the way in which the University is processing your personal data, please contact the Data Protection Officer:

Jennifer Sewel
University Secretary
Telephone: (0191 33) 46144
E-mail : university.secretary@durham.ac.uk

Your rights in relation to your personal data

Privacy notices and/or consent
You have the right to be provided with information about how and why we process your personal data. Where you have the choice to determine how your personal data will be used, we will ask you for consent. Where you do not have a choice (for example, where we have a legal obligation to process the personal data), we will provide you with a privacy notice. A privacy notice is a verbal or written statement that explains how we use personal data.

Whenever you give your consent for the processing of your personal data, you receive the right to withdraw that consent at any time. Where withdrawal of consent will have an impact on the services, we are able to provide, this will be explained to you, so that you can determine whether it is the right decision for you.

Accessing your personal data
You have the right to be told whether we are processing your personal data and, if so, to be given a copy of it. This is known as the right of subject access. You can find out more about this right on the University's Subject Access Requests webpage.

Right to rectification
If you believe that personal data we hold about you is inaccurate, please contact us and we will investigate. You can also request that we complete any incomplete data.

Once we have determined what we are going to do, we will contact you to let you know.

Right to erasure
You can ask us to erase your personal data in any of the following circumstances:

- We no longer need the personal data for the purpose it was originally collected
- You withdraw your consent and there is no other legal basis for the processing
- You object to the processing and there are no overriding legitimate grounds for the processing
- The personal data have been unlawfully processed
- The personal data have to be erased for compliance with a legal obligation
- The personal data have been collected in relation to the offer of information society services (information society services are online services such as banking or social media sites).

Once we have determined whether we will erase the personal data, we will contact you to let you know.

Right to restriction of processing
You can ask us to restrict the processing of your personal data in the following circumstances:

- You believe that the data is inaccurate, and you want us to restrict processing until we determine whether it is indeed inaccurate
- The processing is unlawful, and you want us to restrict processing rather than erase it
- We no longer need the data for the purpose we originally collected it, but you need it in order to establish, exercise or defend a legal claim and

You have objected to the processing, and you want us to restrict processing until we determine whether our legitimate interests in processing the data override your objection.

Once we have determined how we propose to restrict processing of the data, we will contact you to discuss and, where possible, agree this with you.

Retention

The University keeps personal data for as long as it is needed for the purpose for which it was originally collected. Most of these time periods are set out in the University Records Retention Schedule.

Making a complaint

If you are unsatisfied with the way in which we process your personal data, we ask that you let us know so that we can try and put things right. If we are not able to resolve issues to your satisfaction, you can refer the matter to the Information Commissioner's Office (ICO). The ICO can be contacted at:

Information Commissioner's Office Wycliffe House Water Lane Wilmslow Cheshire SK9 5AF

Telephone: 0303 123 1113

Website: Information Commissioner's Office

PART 2 – TAILORED PRIVACY NOTICE

This section of the Privacy Notice provides you with the privacy information that you need to know before you provide personal data to the University for the particular purpose(s) stated below.

Project Title:

Critical thinking across the disciplines at the Algerian University.

Type(s) of personal data collected and held by the researcher and method of collection:

Personal data will be collected through semi- structured interviews. This will include information about their discipline, qualification and teaching experience. Other data will also be sought such as their attitudes towards their pedagogy in relation to students' critical thinking development, in addition to their views about critical thinking in their disciplines and in the context of Algerian higher education and how they believe they support its development.

Lawful Basis

Under data protection legislation, we need to tell you the lawful basis we are relying on to process your data. The lawful basis we are relying on is public task: the processing is necessary for an activity being carried out as part of the University's public task, which is defined as teaching, learning and research.
For further information see
https://durham.ac.uk/research.innovation/governance/ethics/governance/dp/legalbasis/

How personal data is stored:

- All personal data will be held securely and strictly confidential to the research team. The respondents will be allocated an anonymous number for data collection which will not be connected to their names or identity. Signed consent forms will be stored separately to project data.
- All personal data in electronic form will be stored on a password protected computer, and any hardcopies of the notes taken will be kept in locked storage. Data will not be available to anyone outside the research team.
- The conversation will be recorded and stored on an encrypted device until it has been transcribed by the researcher. No-one else will have access to the recording, and it will be erased once the transcript has been completed.

How personal data is processed:

- *The researcher will be collecting specific data to analyse responses according to certain criteria.* Information will be entered into a database for analysis. After six months the data will be completely anonymised and the original records, including any information which can identify you personally, will be destroyed.
- *The recorded conversation will be transcribed by the researcher, and personal information will be coded and anonymized. The original recording will then be erased.*

Withdrawal of data

- You can request withdrawal of your data until it has been fully anonymised. Once this has happened it will not be possible to identify you from any of the data we hold.
- *the research team will consider requests to delete data on a case-by-case basis and should explain when and why it would not be possible to withdraw the data.*

NB: on the basis of consent given by the respondents, they will have the right to withdraw any identifiable data, and the researcher must be able to comply with their requests.

Who the researcher shares personal data with:

Please be aware that if you disclose information which indicates the potential for serious and immediate harm to yourself or others, the research team may be obliged to breach confidentiality and report this to relevant authorities. This includes disclosure of child protection offences such as the physical or sexual abuse of minors, the physical abuse of

vulnerable adults, money laundering, or other crimes covered by prevention of terrorism legislation. Where you disclose behaviour (by yourself or others) that is potentially illegal but does not present serious and immediate danger to others, the researcher will, where appropriate, signpost you to relevant services, but the information you provide will be kept confidential (unless you explicitly request otherwise).

How long personal data is held by the researcher?

We will hold personal data for six months, after which it will be anonymised.

How to object to the processing of your personal data for this project:

If you have any concerns regarding the processing of your personal data, or you wish to withdraw your data from the project, contact
The researcher: Mrs. CHERGUI AMIRA
Email : amira.chergui@durham.ac.uk

Appendix D Debriefing Sheet

Project title: *Critical Thinking across the disciplines at The Algerian University*

Thank you for taking part in this study.

What I want to find out from this research is first to gain insights and understand how the Algerian context define critical thinking? How is this evidenced and how teachers believe it could be facilitated and practiced in classrooms?
By gaining insights from Algerian academics about interpretations of critical thinking, we are contributing to the global discussion about the concept and determining the extent to which these views in the Algerian context are relevant to the literature.

The data you have provided is automatically anonymized and cannot be traced back to your identity.

If you would like further information about the study or would like to know about what my findings are when all the data have been collected and analyzed, then please contact me on my email provided earlier. I cannot however provide you with your individual results.

Appendix E Ethical approval letter

Dear CHERGUI Amira,

The following project has received ethical approval:

Project Title: Critical thinking across the disciplines in the Algerian University context.

Start Date: 01 October 2019.

End Date: 30 September 2023.

Reference: EDU-2022-02-08T17_19_33-gkzr48

Date of ethical approval: 01 April 2022.

Please be aware that if you make any significant changes to the design, duration or delivery of your project,

you should contact your department ethics representative for advice, as further consideration and approval

may then be required.

If you have any queries regarding this approval or need anything further, please contact

ed.ethics@durham.ac.uk

If you have any queries relating to the ethical review process, please contact your supervisor (where

applicable) or departmental ethics representative in the first instance. If you have any queries relating to

the online system, please contact research.policy@durham.ac.uk

Appendix F Interview guide

First Draft for the Interview questions

1. Background information about participating teachers:
- Discipline
- Qualification
- Teaching experience.

2. Teachers' attitudes towards their students' critical thinking development:
- What is the main objective of your teaching?
- How do you see your role in the classroom?
- What are the most complex topics you introduce in your classroom? How do you support students to learn these topics?

3. Teachers' understanding of critical thinking and their awareness of its importance:
- How would you define critical thinking and why you think so?
- Do you think it is important for graduates to develop critical thinking? Why?

4. Critical thinking in the classroom:
- How do you support the development of critical thinking in your classroom and within your discipline?
- Are there any practices that you think are particularly useful in supporting the development of critical thinking? If yes, which do you consider to be the best and most effective ones?
- What are the barriers to supporting the development of students' critical thinking?

5. Critical thinking at the Algerian university:
- How do you think the Algerian higher education system (LMD reforms) supports the development of students' critical thinking? Explain please if it is explicitly or via a hidden curriculum?

Revised Draft of the Interview questions

Subject: _____ Date:

Preface: *Setting the interviewee at rest: explain the purpose of the interview; confirm my commitment to research ethics (checking if all information in the participant information sheet is clear; stressing on the issue of confidentiality and anonymity); ask the interviewee for permission to audio recording.*

Interview protocol questions

1. Background information about participating teachers:

- Discipline
- Qualification
- Teaching experience.

2. Teachers' attitudes towards their students' critical thinking development:

- What is the main objective of your teaching?
- How do you see your role in the classroom?

3. Teachers' understanding of critical thinking and their awareness of its importance:

- How would you define critical thinking and why do you think so? Explain more.
- Do you think it is important for students to develop critical thinking? Why?

4. Critical thinking in the classroom:

    - Do you support the development of students' critical thinking in your classroom and if yes to what extent?
    - Are there any practices that you think are particularly useful in supporting the development of critical thinking? If yes, which do you consider to be the best and most effective ones?
    - Are there any challenges to supporting the development of students' critical thinking?

5. Critical thinking at the Algerian university:

- How do you think the Algerian higher education system (BMD reform) supports the development of students' critical thinking? Explain please how and if it is explicitly or via a hidden curriculum?

6. Further comments/ recommendations

    - Is there anything else you would like to add that you think might be useful?

Appendix G Interview guide (Arabic version)

مقدمة:

تهدئة المُحاوِرين: شرح الغرض من المقابلة؛ تأكيد التزامي بأخلاقيات البحث (التحقق مما إذا كانت جميع المعلومات في ورقة معلومات المشارك واضحة؛ التأكيد على قضية السرية والإخفاء) وأن كل المعلومات المستخدمة غير اسمية وستعامل بكامل السرية وستستخدم للأغراض العلمية فقط. طلب إذن المُجَاوِز لتسجيل الصوت. جميع المعلومات سوف تستخدم لأهداف البحث فقط وسوف تعامل بسرية تامة نود احاطتك بأن مشاركتك تطوعية بحتة ولك الحق في الانسحاب هذه المقابلة مهم جدا لاستكمال بحث تخرجنا لطور الدكتوراه نرجو تعاونكم.

ا. معلومات أساسية عن المعلمين

- التخصص
- المؤهل
- الخبرة التدريسية

ب. مواقف المعلمين تجاه طرق التدريس الخاصة بهم فيما يتعلق بتعزيز التفكير النقدي لدى الطلاب

-ما هو الهدف الرئيسي من تدريسك؟
-كيف ترى دورك في القسم؟

-ما هي أكثر الموضوعات التي تطرحها وتناقشها في القسم؟ كيف تدعم الطلاب لتعلم هذه المواضيع؟

ج. فهم المعلمين للتفكير النقدي وإدراكهم لأهميته

- ما تعريفك للتفكير النقدي ولماذا تعتقد ذلك؟
- هل تعتقد أنه من المهم للخريجين تطوير التفكير النقدي؟ لماذا؟

د. التفكير النقدي في القسم

- كيف تدعم تنمية التفكير النقدي في الفصول الدراسية وضمن تخصصك بالتحديد؟
- هل هناك أي ممارسات بيداغوجية تعتقد أنها مفيدة بشكل خاص في دعم تنمية التفكير النقدي؟ إذا كانت الإجابة بنعم، سمها وما هو الأفضل والأكثر فاعلية برأيك؟
- ما هي العوائق التي تحول دون دعم تنمية التفكير النقدي لدى الطلاب؟

ه. التفكير النقدي في الجامعة الجزائرية

- هل تعتقد أن نظام التعليم العالي الجزائري (إصلاحات نظام ل م د) يدعم تنمية التفكير النقدي للطلاب الجامعيين؟ إذا كانت الإجابة بنعم، اشرح من فضلك إذا كان ذلك بشكل صريح أو من خلال منهج خفي؟

و. ارجو منكم إضافة أي تعليقات او توصيات

شاكرين مساهمتكم وحسن تعاونكم مسبقا.

Appendix H Sample of transcripts (Translated to English)

Date : May 14, 2022 - Duration: 35 minutes 54 seconds
Interviewer with Teacher Hanan
The interview was done online on the zoom platform.

Researcher: Hello, first, thank you for accepting the invitation; that is very kind of you.

You have been invited because the researcher needs teachers' views about critical thinking in the Algerian context , how they conceptualize it and how they believe they support its development and what hindrances they think impede students' critical thinking development.

Committing to research ethics, I would like to reiterate and check if the participant information sheet is clear.

Note that all information obtained during the study will be kept confidential. If the data is published it will be entirely anonymous and will not be identifiable as yours.

you can withdraw at any time, without being judged.
Now, do I have your permission to audio recording?
Hanan: yes, sure.
Researcher: Let us start then.
My first question to you is: what's your academic discipline?
Hanan: it's English literature
Researcher: What about your qualification?
Hanan: I have a Masters' degree.
Researcher: OK, and how many years working at the university of Oum El Bouaghi ?
Hanan: It's 10 years of experience.
Researcher: what's the main aim or objective of your teaching?
Hanan: One of the main objectives of my teaching is what you came to discuss today which is critical thinking; I usually tend to discuss complex topics with my students. I do aim at preparing my students to go to real life and to the world of profession trained and loaded with skills that help them deal with any situation.
Researcher: And how do you see your role in the classroom?

Hanan: In the classroom, it's central. I believe it's pivotal, I don't want to disappoint you, but. Yes, I'm everything in the classroom. students are passive, and they don't help as much.

Researcher: You have talked about discussing complex topics in classroom? Could you explain more. What are these topics and how you tackle them?

Hanan: I teach English literature in classroom, the session runs as I explain literary theories or introduce literature to students; they find it challenging and complex sometimes , but to help them I created a reading log where these students read a story, a text or an extract of a novel each week and we discuss it altogether. It is a kind of homework this reading log,

I always ask them to read or to watch a movie or to listen to a song or I don't k with a critical eye.

Researcher: How is that so?

Hanan: I always ask them to search for what it attracted them most. While reading or listening, is it the story is the character? Is it the setting Is it the theme? Is it the techniques and so on? and this can really trigger very critical thinking and here we come with different angles, different interpretations.

Researcher: Yeah, this interesting. Let us move to another question. Talking about critical thinking the purpose of the study. How do you define critical thinking?

Hanan: I find it a process determined by reflection, evaluation and questioning. It is when you do not accept things anyway; you do not take them for granted.

Researcher: Could you exemplify please?

Hanan: Okay, when you read a story for example, read between the lines and most importantly ask questions as it is not written for the sake of writing, there must be something behind the curtain for you to reflect upon.

Researcher: let's move to the other question? So, do you think that developing students' critical thinking is really important?

Hanan: of course, it is really important not only in the learning of the language or literature but even in their own lives and in everyday situation. It makes them active and productive thinkers who do not take things for granted. it means to produce and to develop your own personality. Your own Identity.

Researcher: You are advocating that critical thinking is important for their self-development, right?

Hanan: Indeed yes

Researcher: my next question, to what extent do you support students critical thinking development?

Hanan: I do sometimes but time is not enough to focus on that aim only; there are lots of challenging barriers to that.

Researcher : okay we will come back to the barriers point , but tell me first how do you do that I mean through which means you support your students to develop their critical thinking?

Hanan: As I mentioned before through classroom discussion of complex topics related to literature and everyday life as well. Through questions as well. Questions such as when, where, how, why and by which means or about the source of information given are amongst the purposeful questions asked by students. They help to dig dipper and beyond the surface and allow the student to understand matters and provide meaningful responses and thus work as a magical strategy for developing students 'critical thinking

Researcher: Do you think that some of these practices are effective?

Hanan: let's say they are more effective than other techniques or methods.

Researcher: coming back to the point of barriers. You mentioned earlier that there are barriers impeding the support of the development of students' critical thinking?

Hanan: Timing is a problem. it's not sufficient at all. Because here to develop what we call literary competence. we have to work on many I'm going to say Sides Very difficult to achieve that.

Researcher: Do you think that the system supports developing students critical thinking?

Hanan: no no it does not at the surface yes, I mean theoretically, but in reality, still no. learning at the university level is still about memorizing. So, imagine, we teach students 3 or 4 sessions and then students ask just for what we give them. Don't give us extra information, just test US on what we dealt with in the classrooms. In this system, students take information as a commodity which must be recalled in exams rather than as information that must be analysed and discussed. we are given instructions just to test them or to evaluate them on what they memorize. Most of the time, we rely on assessment forms that only require information retention; this type of assessment triggers passive recapitulation of theoretical input only and does not serve critical thinking development So this inhibits their critical thinking

Still, I try to, for instance, to ask them questions about critical thinking, give them assignments to argue. I give them passages with questions and so on to let them think anyway.

Researcher: That's it, those are all my questions. Yeah, do you have any recommendations or want to ask questions yourself.?

Hanan: No nothing to add but My advice is don't take things for granted otherwise change would not exist, changing things happen only due to critical thinking I believe. That's my point of view.

Researcher: Thank you so much for your time.

Your insights will be valuable to our research.

Hanan: You are most welcome.

Appendix I Sample of transcripts (Arabic version)

الباحث: مرحبًا، أولاً، شكرًا لك على قبول الدعوة؛ هذا لطف منك

لقد تمت دعوتك لأن الباحث يحتاج إلى آراء المعلمين حول التفكير النقدي في السياق الجزائري، وكيف يصورونه وكيف يعتقدون أنهم يدعمون تطوره وما هي العقبات التي يعتقدون أنها تعيق تطوير التفكير النقدي للطلاب.

مع الالتزام بأخلاقيات البحث، أود أن أكرر وأتحقق مما إذا كانت ورقة معلومات المشاركين واضحة.

لاحظ أن جميع المعلومات التي تم الحصول عليها أثناء الدراسة ستبقى سرية. إذا تم نشر البيانات، فسيكون مجهولاً تمامًا ولن يمكن التعرف عليه على أنه ملكك.

يمكنك الانسحاب في أي وقت، دون إطلاق اي حكم عليك.

الآن، هل لدي إذنك للتسجيل الصوتي؟

حنان: نعم، بالتأكيد.

الباحث: لنبدأ اذن.

سؤالي الأول لك هو: ما هو تخصصك الأكاديمي؟

حنان: إنه الأدب الإنجليزي

الباحث: ماذا عن مؤهلاتك؟

حنان: لدي درجة الماجستير.

الباحث: حسنًا، وكم سنة عمل في جامعة أم البواقي؟

حنان: إنها 10 سنوات من الخبرة.

الباحث: ما هو الهدف الرئيسي الذي تريد ان تحققه من تعليمك في الفصل؟

حنان: أحد الأهداف الرئيسية لتعليمي هو ما جئت لمناقشته اليوم وهو التفكير النقدي؛ عادة ما أميل إلى مناقشة الموضوعات المعقدة مع طلابي. أهدف إلى إعداد طلابي للذهاب إلى الحياة الواقعية وإلى عالم المهنة مدربين ومحملين بالمهارات التي تساعدهم على التعامل مع أي موقف.

الباحث: وكيف ترى دورك في الفصل؟

حنان: في الفصل الدراسي، إنه مركزي. أعتقد أنه أمر محوري، لا أريد أن أخيب ظنك، لكن. نعم، أنا كل شيء في الفصل. الطلاب سلبيون، ولا يساعدون كثيرًا.

الباحث: لقد تحدثت عن مناقشة الموضوعات المعقدة في الفصل الدراسي؟ هل يمكن أن تفسر أكثر. ما هي هذه الموضوعات وكيف تتعامل معها؟

حنان: أقوم بتدريس الأدب الإنجليزي في الفصل الدراسي، وأنا أشرح النظريات الأدبية أو أقدم الأدب للطلاب؛ يجدونها صعبة ومعقدة في بعض الأحيان، ولكن لمساعدتهم، قمت بإنشاء سجل قراءة حيث يقرأ هؤلاء الطلاب قصة أو نصًا أو مقتطفًا من رواية كل أسبوع ونناقشها تمامًا. إنه نوع من الواجبات المنزلية في سجل القراءة هذا، أطلب منهم دائمًا قراءة أو مشاهدة فيلم أو الاستماع إلى أغنية على ان يفعلوا ذلك بعين ناقدة

الباحث: كيف ذلك؟

حنان: أطلب منهم دائمًا البحث عما جذبهم أكثر. أثناء القراءة أو الاستماع، هل القصة هل هي الشخصية؟ هل هو المكان هل هو الموضوع؟ هل هي التقنيات وما إلى ذلك؟ وهذا يمكن أن يؤدي حقًا إلى تفكير نقدي للغاية وهنا نأتي بزوايا مختلفة وتفسيرات مختلفة.

الباحث: نعم، هذا مثير للاهتمام. فلننتقل إلى سؤال آخر. بالحديث عن التفكير النقدي وهو الغرض من هذه الدراسة. كيف تعرف التفكير النقدي؟

حنان: أجدها عملية يحددها التفكير والتقييم والاستجواب. إنه عندما لا تقبل الأشياء على أي حال؛ أنت لا تأخذهم كأمر مسلم به.

الباحث: هل يمكنك أن تفسر أكثر من فضلك؟

حنان: حسنًا، عندما تقرأ قصة على سبيل المثال، اقرأ بين السطور والأهم من ذلك طرح الأسئلة لأنها غير مكتوبة من أجل الكتابة، يجب أن يكون هناك شيء خلف الستار لتفكر فيه.

الباحث: دعنا ننتقل إلى السؤال الآخر؟ إذن، هل تعتقد أن تطوير التفكير النقدي للطلاب أمر مهم حقًا؟

حنان: بالطبع، إنه مهم حقًا ليس فقط في تعلم اللغة أو الأدب، ولكن حتى في حياتهم وفي أوضاعهم اليومية. يجعلهم مفكرين نشطين ومنتجين لا يأخذون الأشياء كأمر مسلم به. فهو يعني إنتاج شخصيتك وتطويرها. هويتك الخاصة.

الباحث: أنت تدعو إلى أن التفكير النقدي مهم لتطورهم الذاتي، أليس كذلك؟

حنان: نعم بالفعل

الباحث: سؤالي التالي، إلى أي مدى تدعم الطلاب في تطوير التفكير النقدي؟

حنان: أفعل ذلك أحيانًا، ولكن الوقت لا يكفي للتركيز على هذا الهدف فقط؛ هناك الكثير من الحواجز الصعبة أمام ذلك.

الباحث: حسنًا، سنعود إلى نقطة الحواجز، لكن أخبرني أولاً كيف تفعل ذلك أعني من خلال ماذا أنث تدعم طلابك لتطوير تفكيرهم النقدي؟

حنان: كما ذكرت من قبل من خلال مناقشة الفصول الدراسية للمواضيع المعقدة المتعلقة بالأدب والحياة اليومية أيضًا. من خلال الأسئلة أيضًا. الأسئلة مثل متى وأين وكيف ولماذا وبأي وسيلة أو حول مصدر المعلومات المقدمة هي من بين الأسئلة الهادفة التي يطرحها الطلاب. إنها تساعد في حفر الفهم العميق وما وراء السطح وتسمح للطالب بفهم الأمور وتقديم استجابات ذات مغزى وبالتالي العمل كاستراتيجية سحرية لتطوير التفكير النقدي للطلاب

الباحث: هل تعتقد ان هذه الممارسات فعالة؟

.حنان: لنفترض أنها أكثر فعالية من التقنيات أو الأساليب الأخرى

الباحث: العودة إلى نقطة الحواجز. لقد ذكرت سابقًا أن هناك حواجز تعيق دعم تطوير التفكير النقدي للطلاب؟

حنان: التوقيت مشكلة. ان الوقت ليس كافيا على الاطلاق. لأنه هنا لتطوير ما نسميه الكفاءة الأدبية. علينا أن نعمل على .العديد من الجوانب التي سأقول إنها صعبة للغاية لتحقيق ذلك

الباحث: هل تعتقد أن نظام التعليم العالي يدعم تطوير التفكير النقدي للطلاب؟

حنان: لا، لا أعني نظريًا، لكن في الواقع، لا. لا يزال التعلم على المستوى الجامعي يتعلق بالحفظ. لذا، تخيل أننا نعلم الطلاب 3 أو 4 حصص ثم يسأل الطلاب فقط عما نعطيهم إياه. لا تعطينا معلومات إضافية، فقط اختبرنا حول ما تعاملنا معه في الفصول الدراسية.

في هذا النظام، يأخذ الطلاب المعلومات كسلعة يجب استحضارها في الامتحانات بدلاً من المعلومات التي يجب تحليلها ومناقشتها. وصدرت إلينا تعليمات لاختبارهم أو تقييمهم على ما يحفظونه. وفي معظم الأحيان، نعتمد على نماذج التقييم التي لا تتطلب سوى الاحتفاظ بالمعلومات؛ يؤدي هذا النوع من التقييم إلى تلخيص سلبي للمدخلات النظرية فقط ولا يخدم تطوير التفكير النقدي. لذا فإن هذا يمنع تفكيرهم النقدي

ومع ذلك، أحاول، على سبيل المثال، أن أطرح عليهم أسئلة حول التفكير النقدي، وأعطيهم مهام للمجادلة. أعطيهم مقاطع .بها أسئلة وما إلى ذلك للسماح لهم بالتفكير على أي حال

الباحث: هذا كل شيء، هذه كلها أسئلتي. نعم، هل لديك أي توصيات أو تريد طرح الأسئلة بنفسك.؟

حنان: لا يوجد شيء لأضيفه، ولكن نصيحتي هي ألا تأخذ الأشياء كأمر مسلم به وإلا فلن يكون التغيير موجودًا، ولا تحدث .الأشياء إلا بسبب التفكير النقدي الذي أؤمن به. هذه وجهة نظري

.الباحث: شكرًا جزيلاً لك على وقتك

.ستكون رؤيتك قيمة لأبحاثنا

.حنان: أنت مرحب بك للغاية