

Ministry of Higher Education and Scientific Research

Mouloud MAMMERI University of Tizi-Ouzou

Faculty of Letters and Languages

Department of English



**Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Master in English**

Option: *Language and Communication*

***The Investigation of the Teaching of Critical Thinking
in First-Year classes in the Department of English at
Mouloud Mammeri University of Tizi-ouzou: A Case
Study***

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Academic year: 2014/2015

To my beloved family:
My grand fathers and grand mothers,
my parents Meziane and Nouara,
my sisters, Naima and Amira,
my Unkles and Aunts,
my love katia
all my friends

Tarik

To my beloved family:
my parents,
my brothers and my sisters,
all my friends

Kamel

Acknowledgments

We would like first, to express our sincere and deepest gratitude to our supervisor, Mr. AOUINE Akli, for his professional guidance, help, and assistance during the realization of this dissertation. He has been supportive, encouraging and insightful in his comments. His criticism is invaluable. It is thanks to his punctuality in meetings and generosity when reading and reviewing the drafts, that this dissertation reached a completion.

Our greatest appreciations and thanks go to the board of examiners who accepted to read and evaluate our work through their competences and experiences and mainly for their comments and critics that will enrich the work.

We would like also, to thank our sample: teachers of first-year students of the English Department at Mouloud Mammeri University of Tizi-ouzou, who accepted to answer our questionnaire and our presence in their classes.

Special thanks go to our friends; Ouremdani Houcine, Cherifi Yahia, Belguebli Amar and Samah Katia for their help, comments and moral support.

Abstract

This dissertation attempts to investigate the teaching of critical thinking in the first-year classes in the Department of English at Mouloud Mammeri University of Tizi-ouzou. To carry out our research, we used Quellmalz' taxonomy of teaching higher-order-thinking skills. As regards data collection, twenty three(23) questionnaires were administered to the teachers of first-year students and a classroom observation was conducted with twenty one (21) teachers. In order to analyse the data, we opted for a mixed research-method, combining quantitative and qualitative methods. The former helped us to obtain statistical data and the latter served in interpreting the results using critical discourse analysis (CDA). The findings show that although teachers know about critical thinking, most of them do not implement it in their classroom. On the one hand, the main findings of the teachers' questionnaire indicated that the majority of the teachers, that is, 91.3% affirmed that critical thinking takes place in their teaching sessions whereas the minority which was represented by 8.7% indicated that critical thinking does not occur in their classes. On the other hand, the main results of classroom observation reveal that four (4) teachers "always" implement critical thinking in their classes, four (4) teachers "often", two (2) others "sometimes", five (5) teachers "rarely", and six (6) teachers "never". At the end, we suggest a set of solutions to remediate the weaknesses. Finally, it is to be mentioned that our results indicate that critical thinking is not given much importance by teachers of first-year students.

List of Abbreviations

- CT : Critical Thinking
- CDA : Critical Discourse Analysis
- HP : Hypothesis
- HOT : Higher Order Thinking
- LOT : Lower Order Thinking
- MMUTO : Mouloud MAMMERI University of Tizi-Ouzou
- Q : Question

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General Introduction

General Introduction

- **Statement of the Problem**

In education, critical thinking is of great importance and once implemented in the instructional process, stress shifts from teaching how to read and write to teaching how to think, evaluate, judge and analyze. In traditional classes, teaching consists of information delivery and there is no raise of problematic issues. What matters in such classes is the amount of what has been taught. However, today in critical thinking classes learners, are required to ask questions, solve problems, give solutions to raised issues and question evidence in order to learn how to think. Thus, in these classes, learners are actively involved in the learning process; they remain no longer passive consumers of information.

Contrary to traditional classes, the teacher is the most important element, the leader, and everybody must confirm what he/she is saying; nobody has the right to doubt the credibility of his /her sayings. Critical thinking classes are no longer teacher-centered, that is, they are characterized by an interactive atmosphere which is being created by the active involvement of the learners. In these classes, the role of the teacher is to direct the thinking of students by using different strategies in order to perform and progress towards reaching the intended instructional outcomes. It is a student-centered class in which learners' involvement is necessary and not optional, since everybody has to participate and give his/ her feedback, view, and comment issues.

To be critical thinkers, students must know and master a range of cognitive skills such as comprehension and recognition (*“lower-level thinking skills”*) that will result in developing complex skills (*“higher-order thinking skills”*) that permit them to distinguish between what is true and what is false, what is real and unreal, distinguish fact from fiction, examine the credibility of arguments. In fact, thinking critically also requires the availability

of a context. How can we figure out true from false, positive from negative, advice from a must? if there is no context. Indeed, it has been stated by Perkins and Salomon (1989) that *“critical thinking skills must be taught in context”* (cited in Deanna, K 1999: 17). That is to say, in order to evaluate an idea or make judgment about it; this idea should first exist then be put under examination where the aforementioned processes take place. In Brown’s words: *“we cannot expect children to progress in the development of thinking unless we give them something to think about”* (Brown. A. 1997: 52).

A critical thinking society is the one that teaches its members the required skills to think critically at various levels of education: primaries, colleges, universities, etc. Indeed, critical thinking is highly emphasized at the university level, because, at this level students are ready to develop higher-order thinking skills such as evaluation, synthesis, inference, and so on. Also, the students are open-minded enough to understand the importance of critical thinking, both in classes and outside. The primary purpose of teaching critical thinking at university is to prepare students to integrate professional careers as effective employees and responsible citizens. In fact, an increased need of thinking strategies will mark the future because *“workplace literacy in the next millennium will be synonymous with problem-solving”* (Mariam Jean Dreher, 2000 Cited in Schneider. V: 1). Since the primary goal of critical thinking at university is that of preparing students to integrate careers, the present research will explore the extent to which the Department of English at Mouloud Mammeri University of Tizi-ouzou prepare the students to be critically ready to face their professional lives.

Critical thinking has been widely investigated during the last two decades. Indeed, many researchers turned their attention to issues such as what is critical thinking? What is its importance? How do we promote it? Is it generalizable? Among the different researchers who explored this issue, Morris & Ennis (1989), Paul (1990), Lipman (1991) are worthy to be mentioned. Yet, despite the fact that they are interested in the same topic, these authors

remain distinct in their approaches to define it. In addition to this, at present there is no research conducted at the level of the English department of Tizi-ouzou regarding this issue, and this fact adds value to our research. This is why we want to fill the gap.

- **Aims and Significance of the Study**

The present dissertation aims at investigating the teaching of critical thinking in first-year classes in the Department of English at Mouloud Mammeri University of Tizi-ouzou. In more precise terms, it seeks to explore the use of critical thinking strategies by teachers to incite their students develop their thinking abilities. In addition, it intends to persuade the reader, teacher and student of the merits of teaching critical thinking in the classroom and suggests means of applying it. We have opted for this research because of its originality and of the importance that critical thinking has in the teaching/learning process.

- **Research Questions and Hypotheses**

Our work addresses a practical gap by investigating the implementation of critical thinking in the teaching/learning process at the level of the English department, focusing mainly on the strategies used by teachers to promote or encourage critical and reasonable thought. To fulfill this purpose, we will attempt to provide answers to the following questions:

Q1: Do teachers give importance to critical thinking in the first year classes at the department of English at MMUTO?

Q2: To what extent do teachers in the department of English at MMUTO encourage the first-year students to think critically?

Q3: How do teachers value critical thinking in the English department of Tizi-ouzou?

To answer these questions, we advance the following hypotheses:

Hp1: Teachers give much importance to critical thinking in the department.

Hp2: Teachers give little importance to critical thinking in the department.

Hp 3: Teachers encourage the students to think critically.

Hp 4: Teachers do not encourage the students to think critically.

- **Research Techniques and Methodology**

To carry out our investigation, we adopt a Mixed Research Method, combining quantitative and qualitative methods. While the quantitative method is used to collect data, the qualitative method will be used to analyze the data. The research data is gathered using two main instruments: a questionnaire for teachers and classroom observation. The latter will add more information and help in confirming or refuting the questionnaire's results. The participants are teachers of first-year students of the English Department at MMUTO. Choosing first-year level is not done randomly; it is selected taking into account a set of criteria such as the fact that first-year students are in the beginning of their course of study at university. Thus, the students need to be prepared. In addition, this level is considered as the level of transition from middle school to high school and the students in this phase need to develop the skills that help them to adapt to the new environment. Finally, this level was selected among others because it is the pillar of this stage of studies.

- **Structure of the Study**

The present dissertation follows the traditional-complex model. It is divided into four chapters, in addition to a General introduction and a General conclusion. The first chapter is entitled *Critical Thinking: theoretical considerations*. This chapter reviews the main important literature on the topic and states briefly the framework or the approach to be

followed in carrying out this study. The second chapter “*Research Design*” gives detailed information about the participants and the data collection procedures. The third chapter is called *Findings* and it is concerned with presenting the findings or the results of our study. The last chapter deals with *Discussion of the Findings* and is devoted to the analysis of the results obtained from our investigation.

***Chapter 1: Critical Thinking:
Theoretical considerations***

Introduction

Critical thinking, as an outcome of students' learning, has been given much importance and widely recognized by educators. It is viewed as one of the most important goals of education, as one of the necessary skills needed in both school and real life. Despite this awareness of its importance, there is a lack of consensus regarding how to define it. In this chapter we are going to review the most prominent definitions of critical thinking. This section, hence, deals with the review of literature concerning critical thinking; it reviews the main theoretical frameworks and concepts relating to it. At this point, it is worth mentioning that this part dealing with the review of literature will focus on theoretical bases that help us to discuss the results obtained from the teaching of critical thinking in the department of English at MMUTO.

I.1. General Overview

It has been stated by the Educational Policies Commission that *"The purpose which runs through all other educational purposes is the development of the ability to think"* (Cited in Gregory Bassham et al, 2010: 1). This means that critical thinking should be at the heart of any educational programme or policy. In this context, it is to be indicated that *"educated people are not necessarily better thinkers"*. The US Department of Education, Institute of Education Services (2008) reported that although Americans are highly educated than ever before, we still notice behaviour and thoughts that are *"ill-conceived"* or *"thoughtless actions"*. This appears clear in professor Diedrik. A. Stapel of Tiburg University, Netherlands, who, in an investigation, declared that *"meat eaters are more selfish and less social."* Many people believed him, especially vegetarians. But later on, his study was questioned by some researchers and discovered that Staple's data were not valid (Hannie de

Bie and Pascal Wilhelm, 2011). Through this example, we understand the necessity to use critical thinking skills to consider issues and question their validity.

Tsui (2002) clearly distinguished between teaching students *“what to think”*; that is with a high degree of education and teaching them *“how to think”* ; that is *“better educated”*. Teaching students what to think is a traditional method within which the teaching process is *“factual oriented and material”* and the lecture is just a delivery of information with no questioning and raising of issues. Indeed, what is important at the end of the lecture is what the students were taught and not what was learned. Conversely, teaching students how to think refers to *“a problem-oriented process of teaching”* which makes students think in an abstract way using their cognitive thinking abilities. Consequently, in this kind of learning process, being given an issue, the learners should be able to judge, analyse and think critically about it and learn how to be involved in examining whether a statement or thought is true or false and question the validity of arguments. In this way, the learning process will be characterised by active participation and motivation, interactive and communicative classroom, creative and challenging courses.

Over the last decade, critical thinking has been viewed and defined in many different ways. Chance's definition corresponds to four levels of Quellmalz' taxonomy which are: analysis, comparison, inference and evaluation. Tama (1989), on her part, described it by attributing to it a new specificity by considering critical thinking as a cognitive process purely mental (metacognitive) which consists in thinking about thinking. Formulated differently, it is thinking about one's (own) knowledge and calls it: *“a way of reasoning that demands adequate support for one's beliefs and an unwillingness to be persuaded unless support is worth coming”*. Tama's definition entails that this way of thinking implies reasoning. For her, it is thinking of knowledge about (precedent) knowledge which simply means that a new form of knowledge is generated from the one on which reasoning has been applied. Halpern (1996)

truly supports and confirms this idea when she suggested that “*knowledge is not static but rather dynamic as current knowledge builds on old knowledge, which in turn generates new knowledge*”. In an interview for *Think Magazine* (April 1992), Richard Paul declared that critical thinking can be defined in a number of ways, and that we should not give importance to only one definition. He defined it as “*thinking about your thinking while you are thinking in order to make your thinking better*”. We understand here that thinking about thinking entails *self-improvement* by assessing thinking using cognitive skills.

The definition that we may attribute to critical thinking as a cognitive process is to say that it consists in asking questions about our and others’ claims by analyzing their nature (the nature of the thoughts) using reasonable reflection, this by interpreting and evaluating information to reach the purpose of deriving personal judgement. We put emphasis on deriving judgments as the unique purpose of critical thinking putting aside interpretation and evaluation just as being steps to go through because what is required from students is not just to assert things, or to try to reason, evaluate and give personal interpretation of an idea, it is rather to find support to their judgment giving evidence and reasons, following a set of criteria. They are called on to reason using their cognitive abilities on thoughts, ideas and arguments. We illustrate this point by quoting from Antoine de Saint-Exupéry who said : “*Connaitre, ce n’est point de démontrer, ni expliquer; c’est accéder à la vision*”. That is, the important is not the fact that we know things, we can review, or explain them, but it is to have our own vision of things and our vision of the world.

Students should imperatively avoid being influenced by any trend, tradition or authority which supposes that a given thought is to be considered as a fact. Students should rather be critical in their thinking and reasoning and have a personal opinion about what is said to be facts and make decisions on whether an idea is correct or not.

According to Pescatore (2007: 330) *“citizens must not only think critically about what they read and view, but they must also react to transform the world.”* That is, not to take things for granted and accept information like if it is exclusively true and as if it requires no questioning and discussion. Instead, learners are required to explore and consider the given issues. As a result, this behavior *“offers a way to speak out against injustice and unfairness”* (ibid).

Throughout history, stress was put on the importance of being cognitively competent. The idea here is that the view about the significance of critical thinking did not change and remains universal. Accordingly, teachers are called on to put emphasis on the importance of implementing critical thinking in schools. That is, for teachers it is not just needed; but it is to be considered as being fundamental in the teaching/learning process.

I.2. Definitions of Critical Thinking

The literature shows that critical thinking has been defined differently by different scholars and from different perspectives. In this review, we are going to classify these definitions according to three approaches.

I.2.1. The Philosophical Approach

This approach comprises the works of Socrates, Plato, Aristotle, Lipman and Richard Paul. *“This approach focuses on the hypothetical critical thinker, enumerating the qualities and characteristics of this person rather than the behaviors or actions the critical thinker can perform”* (Lewis and Smith, 1993). Sternberg (1986) asserted that the philosophical school considers a critical thinker as an *“ideal type”* by emphasizing on what people are able to do under good circumstances. Among the definitions that were given by this school, we mention the following:

1: *“the propensity and skill to engage in an activity with reflective skepticism”* (McPeck, 1981 : 8). Mc Peck here describes more the mind’s traits that are reflection and skepticism, to have the tendency to doubt and make a suspicious reflection about something, it is clearly hypothetical.

2: *“reflective and reasonable thinking that is focused on deciding what to believe or do”*

(Ennis, 1985: 45). This definition relates C T to other higher-order-thinking skills, namely reflective and reasonable thinking. In fact, in this definition, Ennis equated critical thinking with other higher-order skills and did not deal with critical thinking for its own.

3: *“skillful, responsible thinking that facilitates good judgment because it 1) relies upon criteria, 2) is self-correcting, and 3) is sensitive to context”* (Lipman, 1988 : 39). It is responsible thinking because it is important to mention that critical thinking is synonymous with criticizing, but not in the negative sense. The process of deriving good judgments (under context sensitivity) involving contextual aspects of knowledge makes students be sure that they have good reasons for their beliefs.

4: *“purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or conceptual considerations upon which that judgment is based”*

(Facione, 1990 : 3). I.e. critical thinking is based on the use of some skills that are essential in making judgments.

5: *“disciplined, self-directed thinking that exemplifies the perfections of thinking*

appropriate to a particular mode or domain of thought” (Paul, 1992 : 9). Here C T is related to specific domains, i.e. it is not considered as a general process that can be applied (used) in a variety of domains. This definition limits the mind to specific fields.

6: *“thinking that is goal-directed and purposive, thinking aimed at forming a judgment, where the thinking itself meets standards of adequacy and accuracy”* (Bailin et al., 1999b : 287 cited in Emily R. Lai 2011 : 6). This description is hypothetical and comprises abstract traits of critical thinking. In its sense, to work on ill-structured problems, scenarios and debatable issues that have no definite answer better promote and stimulate the thinking abilities of students and require from them reflective judgments.

I.2.2. The Psychological Approach

This approach focuses most on the mental or cognitive abilities that a critical thinker has. This trend contrasts with the first one in a way that psychologists tend to emphasize *“how people think versus how they could or should think under ideal conditions”* Sternberg (1986). In addition, psychologists define critical thinking by what critical thinkers can perform (actions and behavior) not by figuring out characteristics of the *“ideal critical thinker”* or citing norms of a good thought. Here is a short list of the most prominent definitions in this area:

1: critical thinking is *“the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts”* (Sternberg, 1986: 3). He describes the metacognitive and abstract knowledge that the mind uses to achieve this mental process. In this description C. T. is related to real-world situations.

2 : It is *“the use of those cognitive skills or strategies that increase the probability of a desirable outcome”* (Halpern, 1998 : 450). Critical thinking in this definition is viewed as a

skill that may be learned or a strategy that may be used to produce or renew ideas at the cognitive level.

3: *“seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth”* (Willingham, 2007 : 8). This is all about the mental attitudes of a critical thinker who takes nothing for granted and looks to the deep and surface structures of an issue by reconsidering what he/she believes.

4: critical thinking is *“the ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems”*(Chance,1986). Chance lists the cognitive skills that we can perform in the process of C T. His description is almost close to Quellmalz’ framework that involves higher-level-thinking skills.

I.2.3. The Educational Approach

One of the most influential educationists in the 20th century is Benjamin Bloom, whose taxonomy has revolutionized the field of education by citing and classifying the goals of an education system. Bloom’s taxonomy comprises six levels of lower and higher order thinking which are: knowledge, comprehension, application, analysis, synthesis, and evaluation. The three last elements are concerned with higher-order thinking or critical thinking (Kennedy et al 1991). The idea is that a critical thinker is one who is able to analyze, synthesize and evaluate. In addition to B. Bloom, we can mention Edys Quellmalz who, on her part, developed another taxonomy in which she stated four (4) levels of higher order thinking which are, analysis, comparison, inference and evaluation and one (1) of lower order thinking which is recall (R. J. Stiggins, E. Rubel, and E. Quellmalz, 1988). In addition to Bloom and

Quellmalz, Paulo Freire, known as the founder of critical pedagogy, has revolutionized this field through his work entitled *“pedagogy of the oppressed”* where he stated that *“pedagogy is not a method or an a priori technique to be imposed on students, but a political and moral practice that gives the knowledge, skills and social relations that enable students to expand the possibilities of what it means to be critical citizens”* (Henry A. Giroux, 2010). For him, critical thinking does not consist in reproducing the past and understanding the present, it is rather a way of thinking beyond the present. i.e. critical thinking is not about reviving past ideas, or adopting others’ actual opinions, but it is to question and explain things relying on evidence, logic and come out with personal judgments (Ibid).

I.3. Areas of Agreement

We are going to mention the areas of agreement among the aforementioned schools about critical thinking.

I.3.1. Importance of Background Knowledge

Differences between the three schools of thought concerning their attempts to define critical thinking can be clearly observed. Despite this, there exist some areas in which they are in agreement. First, background knowledge has been given much importance. In fact, most researchers consider background knowledge important if students are to manifest their critical thinking skills (Case 2005; Kennedy et al, 1991; Willingham, 2007). Isn’t it more appropriate to say that knowledge in any specific field is required to demonstrate elements of critical thinking? Mc peck (1990) asserts that, in order for students to think critically, there should be something to think critically about. Similarly, Bailin et al (1999) found that: *“domain specific knowledge is indispensable to critical thinking because the kinds of explanations, evaluations and evidence that are most highly valued vary from one domain to another.”* This means that one should own background knowledge in various domains. Resnick (1997) pointed out that

structuring instructions that are built on prior knowledge is the first step towards enhancing students' critical thinking.

I.3.2. Abilities Included in Critical Thinking

The second area of agreement is concerned with the abilities included in the definitions given by the three schools. Therefore, it is noticed that merely all the definitions make reference to: analysing arguments, making inferences through deductive and inductive reasoning, judging or evaluating data, making decisions and solving problems. This means that a good critical thinker must have at least some of these skills that belong to higher-order thinking.

I.3.3. Dispositions

In addition to abilities or skills, dispositions are another area of agreement between the aforementioned schools. Critical thinking abilities and dispositions are in fact separate entities that are considered as "*attitudes or habits of the mind*". They were defined by Facione as being "*consistent internal motivations to act toward or respond to persons, events or circumstances in habitual, yet potentially malleable ways*" (2000 :64).

Common critical thinking dispositions are shortlisted as follows: "*open-mindedness, fair-mindedness, the propensity to seek reason, inquisitiveness, the desire to be well-informed, flexibility and respect for others viewpoints*" (Bailin et al,1999; Ennis,1985; facoine,1990; Halpern,1998; Paul,1992 cited in Emily R. Lai 2011 : 10). Good critical thinkers are characterized by the combination of these dispositions and higher-order thinking skills. These two points will be discussed in depth in the following sections.

I.4. Areas of Disagreement

This part is devoted to the discussion of the areas of disagreement in critical thinking among the three schools mentioned above.

I.4.1. Domain Specificity

The question whether to circumscribe critical thinking to a particular domain (e.g. teaching and learning) or not is one area of disagreement between researchers. Though some of them assert that critical thinking skills can be generalized; i.e. they can be used in different domains and contexts, which also means that they should be taught in a standard way, not specific to any particular field. For example, Halpern (2001) states that general instruction in critical thinking skills is successful and of great importance. Similarly, Van Gelder claims that critical thinking is “*intrinsically general in nature*” (2005: 43).

The opponents to this view deny the claim that critical thinking skills are not domain specific. For instance, Willingham (2007) considers critical thinking as being easier to be learned and practiced in any particular or specific domain than in a general one. Knowledge on specific domains remains important and necessary for critical thinking because what builds valid arguments, evidence and standards tends to vary across domains. In this context, Bailin argues that:

For example, it makes no sense to refer to a process of interpreting which remains constant regardless of subject matter. Rather, what is involved in and even meant by interpreting varies with the context, and this difference is connected with the different kinds of knowledge and understanding necessary for successful completion of a particular task (2002: 366).

Mc peck (1990) for his part says that general thinking skills are limited in number, he argues that “*the most useful thinking skills are those that are domain specific*”.

I.4.2. Transferability

Transferability is another area of disagreement which concerns the process of transferring critical thinking skills and abilities from one domain or context to another. This disagreement leads to the emergence of two points of view concerning transferability, the latter is somehow similar to domain general and domain specific we mentioned in the previous paragraph.

On the one hand, supporters of domain-specificity are skeptic about students' ability to transfer critical thinking skills from one domain to another (Ennis, 1989). As noticed by Willingham (2007), students may manifest critical thinking skills in one domain, but do not succeed to transfer them to another one. This means that students manage to think critically only in the domains they were taught. Kennedy et al (1991) held that transfer to new situations is rare. In addition, researchers such as Glaser, (1984) and Resnick, (1987), argued that since background knowledge is important and essential for thinking in a given domain, transfer to other domains is unlikely to occur. Hendricks (2001) conducted an investigation on this concern, in which he studied two hundred and twenty seven (227) graders to whom he assigned a transfer task. Six weeks after the instruction, the results showed that there was merely no transfer.

On the other hand, some researchers are more positive and enthusiastic about students' ability to transfer. This is possible if students are oriented to practise critical thinking skills in different domains and contexts, especially if they are taught to transfer those skills (Kennedy et al;1991). For example, Halpern (2001) studied the ability of college students to apply or transfer critical thinking skills learned in the context of a specific discipline to another different context a long period after the course was held. The result was positive and the study showed that the students managed to apply the critical thinking skills and the reasoning,

they previously learned to non-academic topics. She asserted that this kind of assessment provides evidence on the transferability of critical thinking across domains.

After having dealt with the areas of agreement and disagreement among the three schools as regards critical thinking, the following part aims at considering the different components of critical thinking.

I.5. Constituents of Critical Thinking

As it has been cited in the majority of the definitions, critical thinking is composed of two complementary components. These constituents are clearly stated in the definition given by the American Philosophical Association (APA). The latter conducted a study in 1988 attempting to develop a consensus on the definition of critical thinking. The study involved forty six (46) experts, philosophers and psychologists, who came with what is known as the *DELPHI REPORT* where the definition was stated in the following terms:

We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. 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 good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society. (Peter A. Facione,1990: 2.)

Based on the definition, it is clear that critical thinking constituents are skills and attitudes.

I.5.1. Skills

The experts found that C T is composed of skills that are situated at higher-level thinking, these skills are: **Interpretation, analysis, evaluation, inference, explanation and self-regulation**. However, to be a critical thinker one is not obliged to master all these skills, the experts have selected or designed some skills as central or basic. These are “*analysis*”, “*evaluation*” and “*inference*” (Peter A. Facione, 1990: 4).

Since critical thinking is composed of skills, hence it is not a method or body knowledge to be delivered or learned, but it is an orientation of the mind, a process that one should follow in order to be a critical thinker.

I.5.2. Attitudes or Dispositions

Based on the definition of the Delphi Report, attitudes are another constituent of critical thinking. These dispositions are habits of the mind. The experts of the report divided these attitudes into two categories. The first one is related to everyday life and living in general and it comprises:

- *inquisitiveness with regard to a wide range of issues.*
- *concern to become and remain generally well-informed*
- *alertness to opportunities to use CT.*
- *trust in the processes of reasoned inquiry*
- *self-confidence in one's own ability to reason.*
- *open-mindedness regarding divergent world views.*
- *flexibility in considering alternatives and opinions.*
- *understanding of the opinions of other people*
- *fair-mindedness in appraising reasoning.*
- *honesty in facing one's own biases, prejudices, stereotypes, egocentric or sociocentric tendencies.*
- *prudence in suspending, making or altering judgments.*
- *willingness to reconsider and revise views where honest reflection suggests that change is warranted (cited in Facione, 1990: 13).*

The second category is concerned with specific issues and it involves different points.

First of all, the question should be stated clearly. Second, doing complex activities is

important. Third, students are called to look for the data they need. Fourth, the selection and application of criteria should be done in the right way. In addition, doing activities with concentration is fundamental. Moreover, it is necessary to avoid giving up when facing difficulties and problems. Finally, the students are required to be precise according to the requirements of the activities they do (Facione, 1990: 13).

I.6. Constructivism and Critical Thinking

It is said that critical thinking is the appropriate teaching method that comes to help and support constructivism, in that, the teaching methods of critical thinking promote or stimulate students and help them develop alternatives, create solutions to problems and communicate clearly and thoughtfully. That is to say, in relation to critical thinking, which is *at the heart of the teaching and learning process*, the constructivist teacher considers education as built on student's use of thinking skills (reasoning) to learn by solving problems, and resolving cognitive conflicts through the use of their experiences (recall on knowledge: experienced or acquired) and reflection. (Jane Davis-Seaver et al). In fact, various principles of considerable importance are to be found within the constructivist approach. This approach intends to form students to learn autonomously and be able to inquire about different issues as well as to question, investigate and use their reasoning. In this context, it is useful to indicate that critical thinking greatly reflects the principles of constructivism which can be stated as follows:

- *Knowledge is constructed, not transmitted.*
- *Prior Knowledge impacts the learning process.*
- *Initial understanding is local, not global.*
- *Building useful knowledge structures requires effortful and purposeful activities* (Socrates programme. Education, Audiovisual and Culture Executive Agency European Commission, Bour-B-1049BRUSSELS. IQST (Improving Quality of Science Teacher), 2009).
- *Teacher uses cognitive terminology and expressions like “classify”, “analyze”, and “create”*
- *Welcome students in the world of contradictions* (M. G. Brooks, 1993 cited in ibid).

The teaching of critical thinking skills seems to be in accordance with the constructivist approach to learning. We can note that in both critical thinking and constructivism there are some traits of resemblance in their teaching principles and learning objectives, in that in the two approaches *student can interact with the material at the metacognitive level*. As a result, *students can create new concepts that may be transferred to other disciplines*. The use of questioning and reflection facilitates their construction of knowledge and critical thinking. Both of them bring students to learn by solving problematic issues, push them to take into consideration alternatives and develop meaningful communication. In addition, they incite and teach students how to think in depth, promote collaborative learning. Hence, critical thinking and constructivism place the students in the center of the teaching/ learning process where the teacher acts only as a guide.

According to Hawkins (1994) Constructivism goes back to Socratic and Platonic practices. He asserted that *“knowledge is actively constructed through interaction and interpersonal exchanges, on the basis of feedback process, assimilation, accommodation and self-modification of sequences of knowledge”* (cited in Mike Watts 1997 : 309). Last but not least, it is to be shown that both critical thinking and constructivism strive for providing learners with good education that permits them to acquire knowledge in the most effective and relevant way.

I.7. Teaching Critical Thinking

Critical thinking is not an innate ability, it is rather a process that can be acquired through years of training. Yet, it is assumed that the teaching programs that were used in the past did not stimulate learners to think critically. Therefore, educators who want to implement this process in their classroom must imperatively teach their students how to think, by stressing a class of discussion, interaction, problem solving and questioning.

How to implement critical thinking is an area of discussion since there are different methods and techniques that may be used in its teaching. Despite the differences, these methods should cover the basics of a critical thinking activity which is composed of four elements as suggested by Broadbear: *“ill-structured problems, criteria for assessing thinking, student assessment of thinking, and improvement of thinking”*(2003 : 7). i.e. First of all, a critical thinking activity should contain problems and situations that are not clear to which students must react and give solutions. In addition, it is important that the teacher uses instructions that permit to assess and evaluate the thinking of the students. For example, the teacher may ask the students to justify their claims to know whether they (the claims) are built on evidence or not. Moreover, it is very important to provide individual feedback to students that finally allows them to reconsider and improve their thinking.

I.7.1. The Socratic Teaching

The Socratic teaching is the oldest teaching method that promotes critical thinking. Yet, it is still one of the most powerful teaching strategies that basically focuses on asking students questions rather than giving direct answers. The Socratic questioning is considered as *“a highly disciplined process”* in which the Socratic questioner’s focus is on questioning goals and purposes by considering different interpretations of the data, analyzing key concepts and ideas, questioning assumptions and considering different points of view. The Socratic teaching method brings the learner to think in a reasonable and responsible way. A Socratic questioner has different tasks to do. First of all, the discussion should be goal-directed; it has a clear aim. Second, any discussion is to be based on intellectual norms. In addition, questioning is a key to make the discussion successful. Moreover, while discussing a given topic making synthesis of the already debated points and of those that need consideration should take place from time to time. Finally, it is important to involve the maximum number

of the students in the discussion process (cited in Paul, R. and Elder, L, 1997). In brief, through the Socratic questioning technique students reconsider the way they think and why they think so. They also check for logical reasoning.

I.7.2. Ennis' Strategies for Teaching Critical Thinking

According to Ennis (2011) "*the teaching of critical thinking is a function of many situation-specific factors [...] teachers' knowledge and understanding, [...] cultural and community background, student expectations and background, the amount of time available for teachers, and teacher grasp of critical thinking*". To be in accordance with the actual teaching situation, Ennis suggests some general strategies.

1. Underlying Strategies

These strategies are composed of three elements. The first element is *Reflection* which consists of inciting students to use reflection and think about the issue raised. The second element is *Reasons*; it is to ask students questions like, "*What are the reasons?*" "*Is that a good source of information?*" Students should have good reasons for their thinking or views. The last element is *Alternatives* within which the teacher should emphasize students' presentation of alternative suggestions, clarifications, opinions and conclusions.

2. Fundamental Strategies

In this section, Ennis made a detailed list of elements to carry out a critical-communicative-thinking classroom. To mention few, we shortlisted the most relevant elements relative to our concern which are as follows:

- *Provide opportunities in different contexts for students to practice the principles of critical thinking on real examples.*
- *Teach for critical thinking principles' transferability by practice with examples that call for transfer.*

- *Asking questions is the best way to draw out the reasons and check if learners are sure of themselves.*
- *Emphasize on being open minded when reconsidering other's points of view and when other reasons and evidence arise.*
- *Assess what is important in critical thinking using tests or other assessing procedures.* (Ennis, 2011b : 14-15 last revised in November, 2013).

3. Mid-level Strategies

At this level when students come to analyzing assumptions , Ennis suggests two strategies to be attended by learners using the following elements.

a. FRISCO

F - Focus: identify or be clear about the main point, that is, the conclusion.

R- Reasons: identify and evaluate the reasons.

I- Inference: consider whether the reasons establish the conclusion, given the alternatives.

S- Situation: pay attention to the situation.

C- Clarity: make sure that the meanings are clear.

O- Overview: review your entire appraisal as a unit.

b. SEBKUS

When learners plan to investigate subject-matters, defend opinions or other actions, Ennis suggests to make full use of their cognitive skills (the C T skills) to expand their *sensitivity* on issues (open-mindedness, fair-mindedness, honesty...), their *experience* on the use of criticism and reflective thinking, recall on *background knowledge* and apply it to new situations, and their *understanding* of the *situation* (ibid).

I.7.3. Quellmalz' Teaching Strategy

When learners plan to expand their reflective thinking, investigate a subject-matter or raise an issue in a critical thinking activity, it is assumed that Quellmalz' teaching strategy appears to be the appropriate teaching technique; this strategy will serve as the approach for

our study. It contains four (4) levels of higher order thinking and one (1) of lower order thinking. This technique will be explored in detail in the next chapter.

Students can be taught the skills of critical thinking by a full understanding of the meaning of its terms and its use. That is to say, with a better understanding of the cognitive skills like inferring, analyzing, comparing and evaluating. Then teaching critical thinking become a simple activity like teaching any other discipline. Once truly understood, concepts like argumentation, logic and inference will be ready for transferability between disciplines and from one context to another.

Conclusion

This chapter reviewed the main theoretical points on critical thinking, comprising a general overview, a definition of critical thinking, areas of agreement and disagreement between researchers, constituents of critical thinking, the relation between constructivism and C T and teaching strategies used in order to teach it. Research in this field continues to increase because of its value and importance in both school and real life situations.

Chapter 2: Research Design

Introduction

This chapter is methodological; it describes the techniques and procedures of data collection and analysis used in our research to answer the research questions asked in the general introduction. The research design is composed of two sections. The first one is called procedures of data collection and it mainly describes the research method, the participants who took part in our research and the instruments used to collect data. The second section is named procedures of data analysis and interpretation and it presents the framework (approach) to be used to interpret the results. The chosen framework was developed by Edys Quellmalz in 1988 and consists in five levels of thinking skills.

II.1. Procedures of Data Collection

II.1.1. Research Method

In order to carry out our case study, we have opted for a mixed research method. The use of quantitative method has allowed us to gather a huge amount of data, and the use of qualitative method in analyzing the gathered data has given us the possibility to answer the research questions and confirm/ disconfirm the hypotheses. As it has been explained by Price, the qualitative method *“helps the researcher to get descriptive information on variables not easily assessed using empirical research and can provide a way to view phenomena from the point of view of the subject”* (1991 cited in Tanveer, 2007: 33). It means that the descriptive qualitative research method permits us to comment on the data gathered from quantitative research.

II.1.2. Participants

The participants involved in our study are teachers of first-year classes in the English Department at the University of Tizi-ouzou. The choice of first year-classes was not done at

random. In other terms, the first year stands for the starting point for freshmen students. The English Department employs one hundred and twenty (120) teachers. However, since our research is concerned with the first-year level we could only include the teachers involved with this level. They are twenty three (23) and all of them teach more than one module.

II.1.3. Data Collection Instruments

In order to collect data related to our investigation we have used two (2) main research instruments. We have administered questionnaires for teachers of first year students in the Department of English and have conducted a classroom observation concerning teachers' teaching for critical thinking.

a) Teachers' Questionnaire

A questionnaire is an important data collection instrument which consists in a set of questions or items which permits to collect a considerable amount of data in a short period of time. The questionnaire we have designed is made up of fourteen (14) questions arranged in three (3) sections. The first section is called identification of the participants in terms of years of experience. The second one is about teachers' attitudes toward critical thinking and it contains five (5) items which are composed of close-ended, multiple-choice, and open-ended questions. The last section turns around teachers' implementation of critical thinking. This section contains eight (8) questions the majority of which are open-ended, and this permits to our subjects to give their own opinions and explanations. The questionnaire was distributed on May 25-27, 2015. In order to analyze the gathered data we have relied on Microsoft Excel 2010 Programme to arrange it using tables and histograms. We have proceeded to the calculation of the percentages using the rule of three which is applied as follows: $x =$

$$\frac{Z \times 100}{Y}$$

The symbol X is the calculated percentage, Z is the value of the similar answers and Y is the total number of the participants. However, using only a questionnaire as a data collection tool is not enough to get reliable data because the respondents can answer in a subjective way and in order to make our results more valid, we have opted for classroom observation as a second research tool.

b) Classroom Observation

The second tool we have used in our study is classroom observation. The latter has permitted us to have access to data in its natural context. Its importance lies in the fact that it allows the researcher to collect valid data. In our investigation we have used a structured classroom observation by developing a checklist of thirteen (13) items to be observed, all of them are related to teaching critical thinking. These observations took place from June 09. 2015 to June 16. 2015. Due to time limitation, we have managed to conduct only twenty one (21) observations instead of twenty three (23).

II.2. Procedures of Data Analysis

II.2.1. Quellmalz Taxonomy of Higher Level Thinking

In order to analyze the collected data, we rely on Quellmalz taxonomy of thinking skills, which can be used to teach critical thinking, as a theory and on Critical Discourse Analysis (CDA) as a method to interpret the results. Contrary to Bloom's taxonomy which contains three (3) levels of lower order thinking and three (3) levels of higher order thinking. Quellmalz' taxonomy contains four (4) levels of higher order thinking and only one (1) level of lower order thinking. The following is an explanation of the taxonomy.

Recall: *“remembering or recognizing key facts, definitions, concepts, etc; repeating verbatim or paraphrasing information that has already been provided to the student”*. In

other words, at this level the teacher incites the students to recall their background knowledge. For example, asking students who is Steve Jobs? This level corresponds to “*knowledge comprehension*” in **Bloom**’s taxonomy.

Analysis: in this phase students divide a whole into components, “*understand the relationship between the whole and the components*”, and the cause/effect relationship, “*understand how things work, how different parts of something fit together, extract information from graphs, charts, tables*”, etc...and elicit intentions from discourses, for instance, how does a solar panel work? How does the author present his ideas?

Comparison: it requires the students to explain the similarities and differences. Comparisons can be simple or complex. The former is based on one or very few “*obvious attributes or component processes*”. The second type requires identification of differentiation among many attributes or component actions. The separate comparison category emphasizes the distinct information processing required when students go beyond breaking the whole into parts in order to compare similarities and differences. As an example: compare living in a country side with leaving in a city.

Inference: it consists of using deduction, induction and abduction. In deductive reasoning, “*students reason from generalizations to specific instances and are asked to recognize or explain the evidence*”, i.e. they go from **Law** to **Case** in order to find out the **Result**. Example: sea water is salty (law) this water is sea water (case) so this water is salty (result). In inductive reasoning “*students are given the evidence or details and required to relate and integrate the information to come up with the generalization*”, that is, they go from **Case** and **Result** to **Law**. For example, examination of a sample of water (case), the result is that the water is composed of H₂O (result) so water is composed of H₂O (law). Abduction is concerned with hypotheses making, in this type of reasoning, we seek to find the

case from observations, and by comparing these observations with a previous rules (law). For instance, twines are born in the same day, X and Y are born in the same day, so X and Y are twines. The latter may not be true.

Evaluation: *“Evaluation tasks require students to judge quality, credibility, worth or practicality using established criteria and explain how the criteria are met or not met”*. For instance: do you find the author’s arguments convincing or not? Why? What is the best solution for...?(E. Quellmalz, et al 1988).

Conclusion

This chapter has shed light on the research design of the study. It has presented the procedures of data collection, has explained the research methods, has provided a description of the sample. It has also presented the two instruments used to gather data. In addition, it has introduced Quellmalz’ taxonomy of higher-order thinking as an approach and CDA as a procedure of data analysis.

Chapter 3: Findings

Introduction

This chapter is about the findings of our study. It presents the results obtained both from the questionnaire we administered to teachers of first-year students and from the classroom observations that we conducted. The aim of this chapter is to see whether teachers in the English department at Mouloud Mammeri University of Tizi-ouzou encourage their first-year students think critically. The findings are presented by percentage and displayed in histograms. This part is divided into two sections. The first section is devoted to the presentation of the findings of the questionnaires and the second section deals with the presentation of the results obtained during the classroom observation.

III.1. Presentation of the Findings

III.1.1. Results of Teachers' Questionnaire

In our research, teachers of first year students were given questionnaires to be filled, the number of teachers is twenty three (23). The results we obtained are the following :

Q1: How long have you been teaching?

The results of this question are arranged from two (2) years to forty (40) years.

<i>Years of experience</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>10</i>	<i>11</i>	<i>13</i>	<i>38</i>	<i>40</i>
<i>Number of teacher</i>	<i>4</i>	<i>4</i>	<i>3</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>3</i>	<i>1</i>	<i>1</i>

Table 1: Teachers' Experience.

Remark: one (1) teacher did not answer the question.

Q 2: According to you, what is critical thinking?

This question is an open-ended question in which an opportunity was given for teachers to express their points of view. The data gathered from this question show that the majority of teachers (82.6%) consider critical thinking as “*developing and using the following cognitive skills : evaluation, analysis, making inferences, judging evidence, that permits you to question things instead of taking them for granted*”. The minority (8.7%) gave a different definition which implies “*being independent in your thinking using logic*”.

Remark: two (2) teachers did not answer the question.

Q3: How do you see critical thinking?

A : Necessary

B : very important

C : important

D : optional

E : unnecessary

F : useless

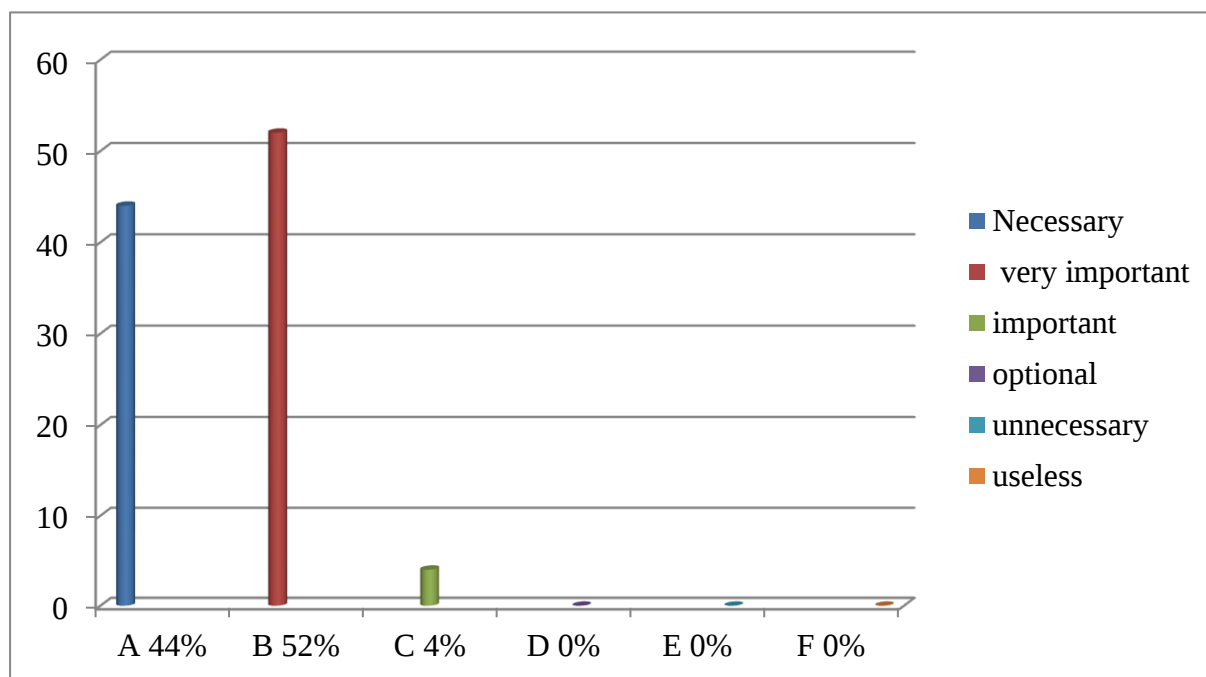


Diagram (1): Teachers' Attitudes towards Critical Thinking.

The aim of this question is to discover what is the value of critical thinking in teachers' eyes. Ten teachers (44%) see it as necessary, the majority (52%) consider C T as very important in education, few of them (4%) see it as an important issue in education.

Q4: Does critical thinking occur in your classroom while teaching?

A : Yes

B : No

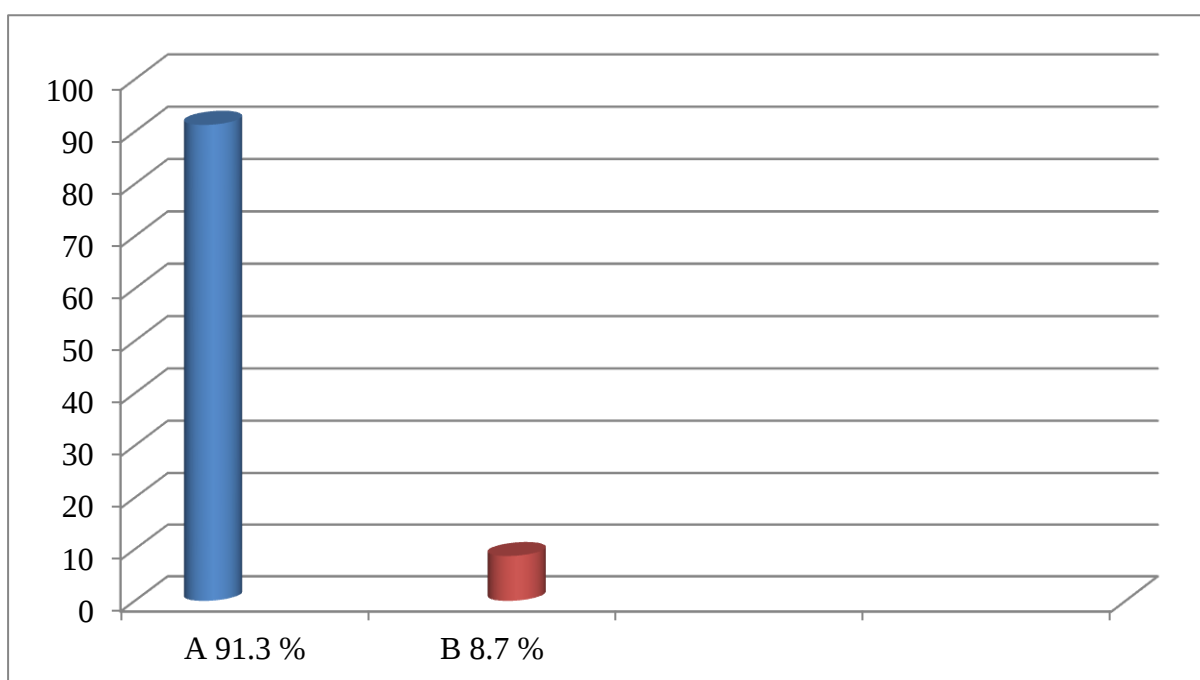


Diagram (2): Occurrence of C T in Classroom.

If yes how often do you notice that?

A : Always

B : Often

C : Generally

D : Sometimes

E : Rarely

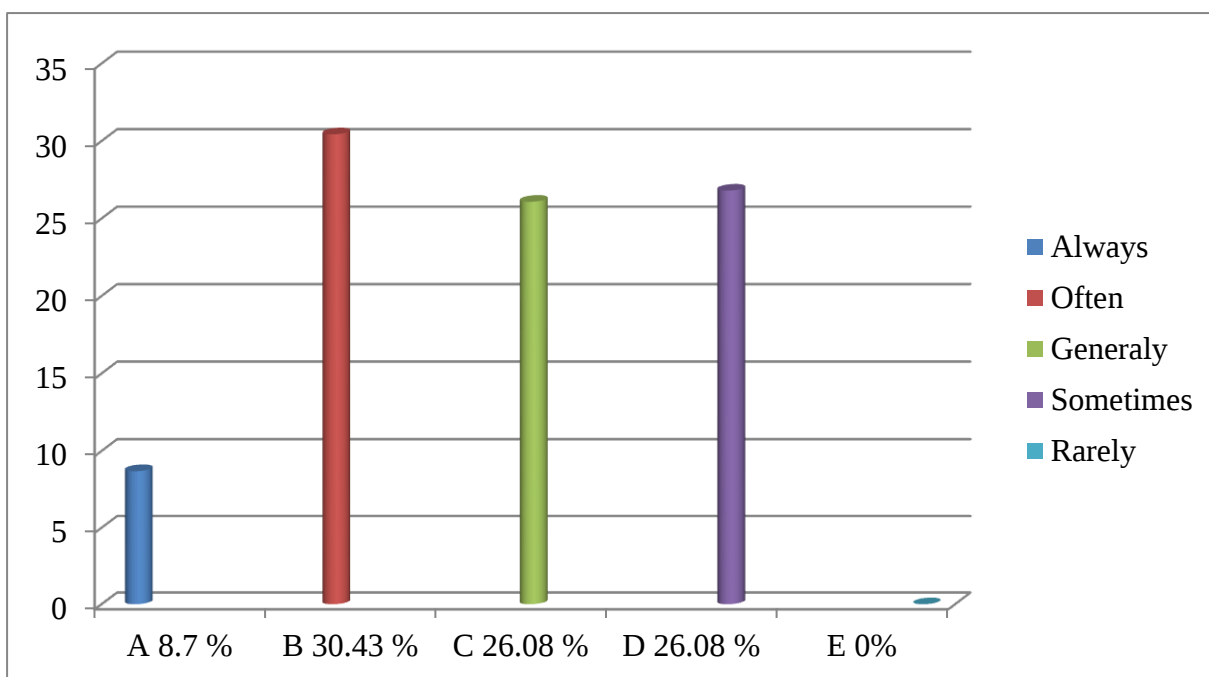


Diagram (3): Frequency of C T Occurrence in First-Year Classes.

From the data gathered, we can see that the majority of teachers (91.3%) say that critical thinking occurs in their classes. Two of them (8.7%) say that it *always* occurs. Seven of them (30.43%) say that it *often* occurs. Six (26.08%) answered by *sometimes*. Six (26.08%) answered by *generally*. No one has mentioned the fifth proposition which is *rarely*.

Q5 : What do you consider to be the most important phase in a lesson?

A : presenting the subject

B : Discussing/ Analysing

C : Practice on rules and theories

D : Other

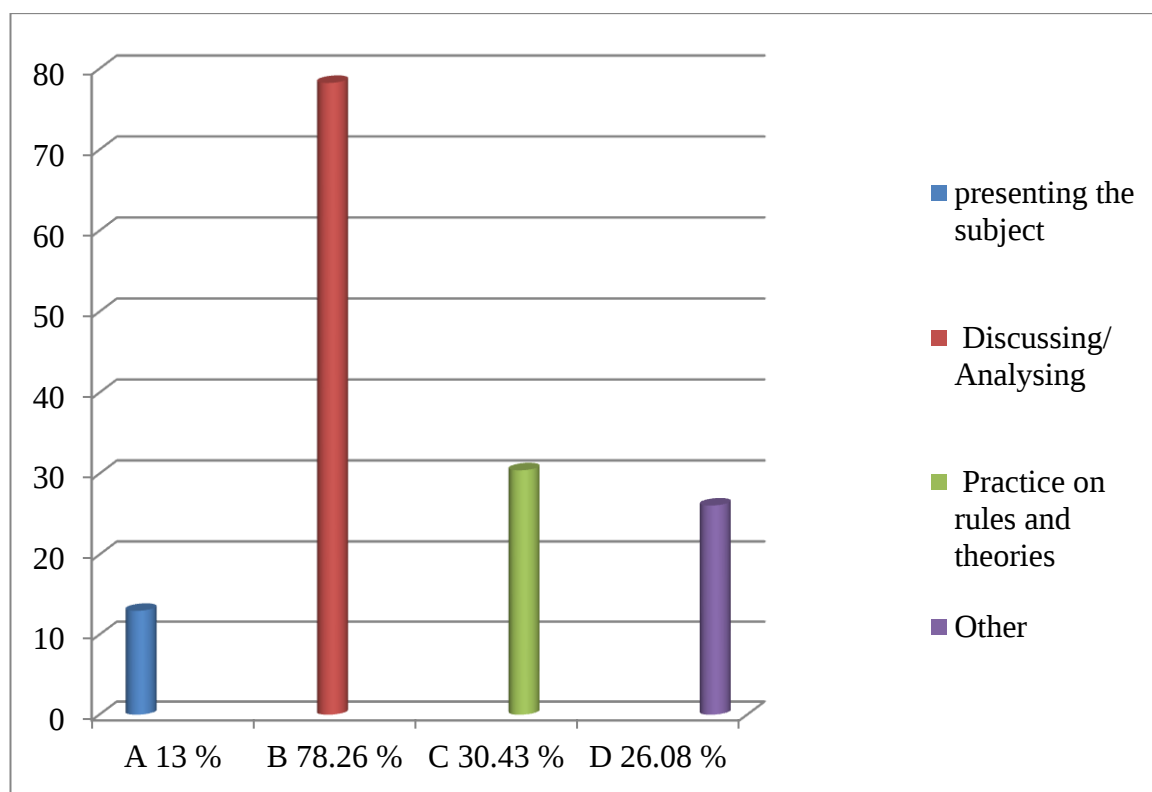


Diagram (4): the Important Phases in a Lesson.

This question aims at discovering what can be the most important stage or phase in a lesson, according to teachers. Most of the participants provided multiple answers, hence, and for the sake of clarity and reliability we found it necessary to present each proposition alone. The result shows that the majority of teachers consider *discussing and analysing* as being the most important phase in a lesson.

Q 6 : According to you, how can interaction foster critical thinking in the classroom?

On the basis of the gathered data, the majority of the respondents assert that interaction permits students to exchange information through dialogues and debates; this pushes them to use critical thinking skills, namely: comparison, evaluation, analysis, and inference. However, one respondent asserts that interaction does not necessarily foster critical thinking.

Remark: Two (2) teachers did not answer the question.

Q 7 : Do you encourage your students to think critically? if yes, how?

A : Yes

B : No

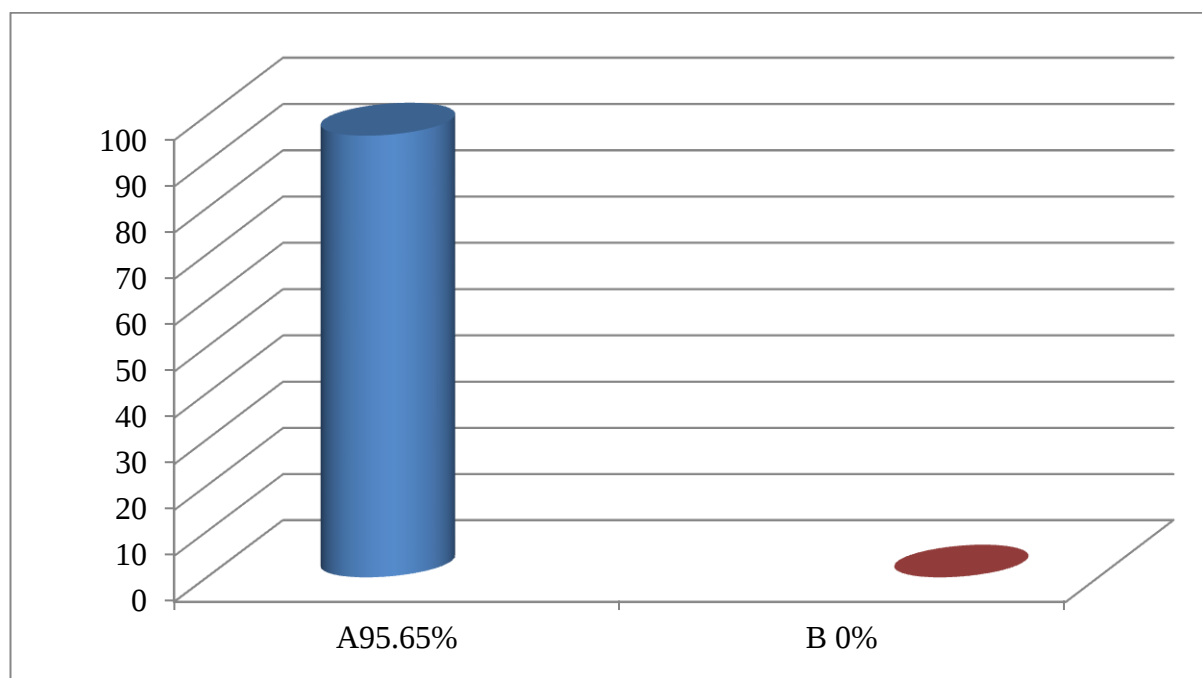


Diagram (5): Teachers' Encouragement of Students to Think Critically

As shown in this diagram, all the respondents except one who did not answer the question say that they encourage their students to think critically by making them give their personal analysis, arguments, ask questions, give personal examples, make inferences...etc.

Q8 : Do you think that your students are able to think critically? if yes, explain how.

A:Yes

B: No

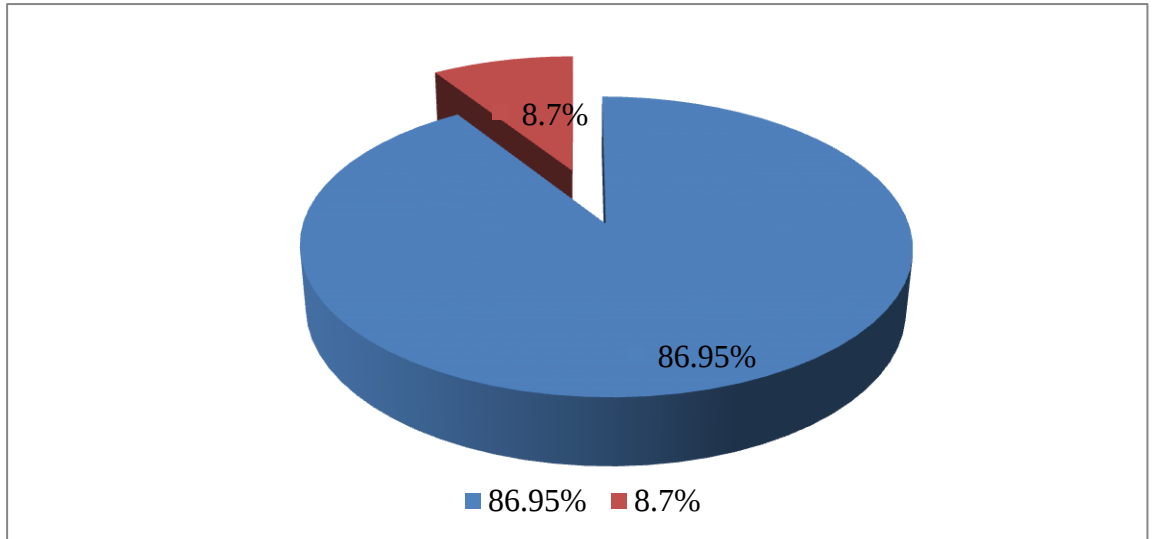


Diagram (6): Teachers' Attitudes towards Students' Ability to Think Critically.

Remark: one (1) teacher did not answer the question.

As shown in diagram 6, the majority of the teachers answered the question by Yes. They explain by saying that students think independently by using their background knowledge to interfere with raised issues, they select what to believe among a huge amount of information, they draw comparisons and conclusions in relation to their daily-life experiences.

Q 9: Do you think that you are able to implement critical thinking in your classroom? If yes how do you proceed?

A : Yes

B: NO

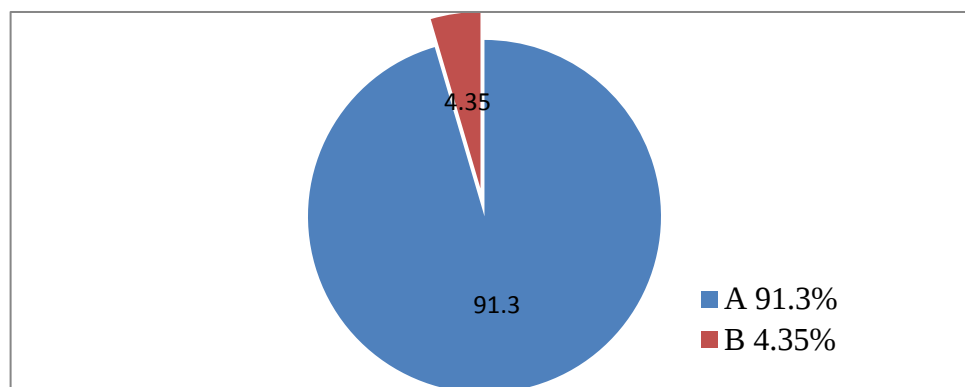


Diagram (7) : Teachers' Ability to Implement Critical Thinking in Classroom.

Remark: one (1) teacher did not answer the question.

The data gathered from this question show that the majority of the respondents answered by yes. They proceed through setting tasks that require the use of higher-order thinking.

Q 10: How can you help your students to develop their critical thinking abilities?

This question is an open-ended one, its aim is to discover the strategies used by teachers in order to help their students develop critical thinking skills.

Remark: two (2) respondents did not answer the question.

On the basis of the gathered data, the strategies used by teachers are varied, some of them use group work, interaction, reading strategies, comparing subjects. Some others practice eliciting, raise students awareness, promote discussion and analysis, explain the importance of critical thinking and ask questions.

Q 11: what particular critical thinking skills do you believe are most important for your students to develop? And why?

A: Recall

B: Analysis

C: comparison

D: Inference

E: Evaluation

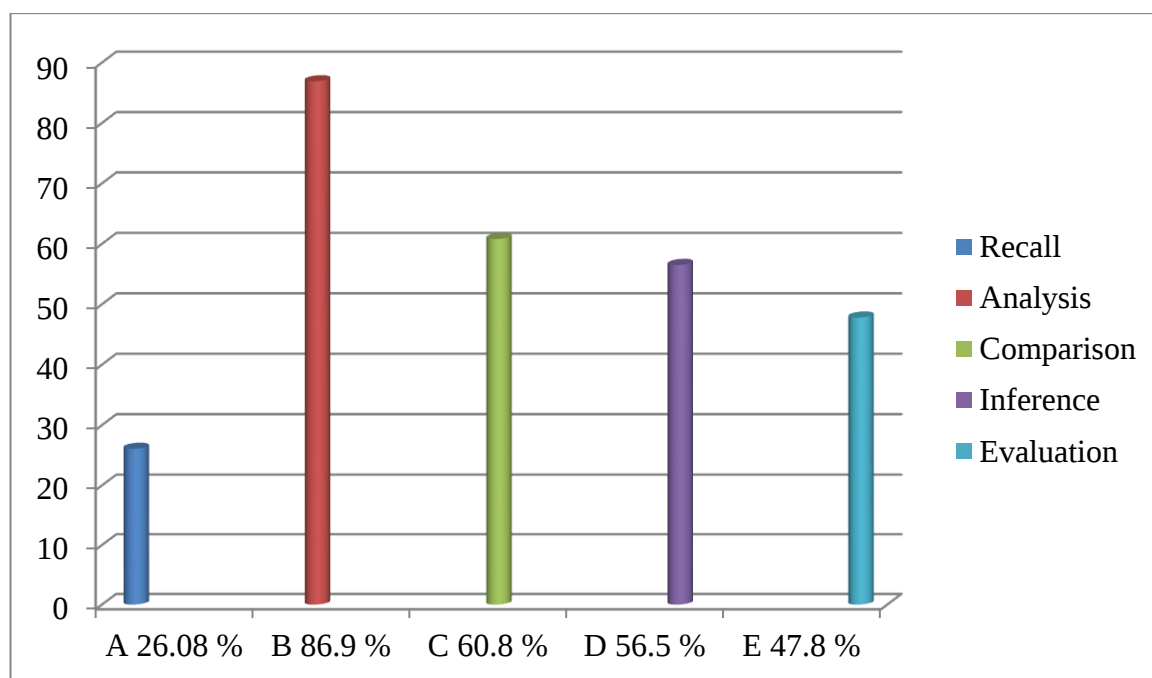


Diagram (8): The Most Important Critical Thinking Skills According to Teachers.

Remark: one (1) teacher did not answer the question

This question is multiple-choice question; its objective is to figure out the most important skills that should be developed by students in order to be critical thinkers. Thus and due to the question's nature or type, we found it necessary to present each suggestion separately.

From the data presented above, it is seen that **Analysis** (86.9 %) is considered to be the most important skill to be developed by students, followed by **comparison** (60.8 %), **inference** (56.5 %), **evaluation** (47.8 %) and **recall** (26.08 %) in the last position.

Q 12: What are the types of activities that can promote a critical thinking atmosphere?

This question is an open-ended question, its aim is to discover the activities that teachers use in order to promote critical thinking.

Remark : four (4) teachers did not answer the question.

The data gathered show that teachers use four (4) types of activities, which are : **problem-solving activities, cooperative learning activities** (group work and role play), **reading activities** and **debating/ analysing activities**.

Q 13: How do you proceed to overcome problems encountered while implementing critical thinking?

The aim of this question is to discover how do teachers manage to solve the different problems they meet while implementing critical thinking. On the basis of the results obtained, it is seen that they use different techniques such as : rising students creativity and awareness, encouraging positive attitudes towards critical thinking, avoiding spoon-feeding and involving all the students, providing positive feedback, reformulating the tasks...

Remark: Five (5) teachers did not answer the question.

Q 14: How do you check your students' critical thinking skills?

This open-ended question aims at seeking how teachers evaluate their students in terms of the development of their critical thinking skills. The results show that, the majority of teachers ask questions and evaluate students' answers, the questions they ask are, generally, open-ended, inference questions and concept checking questions.

Remark: Five (5) teachers did not answer the question.

The first data collection tool we used is the questionnaire. The latter contains fourteen questions, addressed to teachers of first-year level. The questionnaire was analysed quantitatively, most of the time, since our research is concerned with investigating the extent to which teachers make their freshmen students think critically.

III.1.2. Results of the Classroom Observations

The second data collection tool we used in conducting our research is classroom observation. After getting teacher's approval, a total of twenty one (21) attendances have been assured with twenty one (21) teachers of first year students. The observations took place from June 09, 2015 to June 16, 2015 and they are described in a checklist presented in the form of a table. The latter contains thirteen (13) items that we find fostering critical thinking. These items were observed in term of frequency, and arranged from *Always* to *Never*.

The results obtained from these observations are going to be presented in one table that contains the number of teachers according to the frequency of each item; that is, for each item, we are going to state how many teachers use it according to the rank order. We chose such technique (only one table) in order to avoid annoying our readers and present clear data. Also, presenting all the tables will take much space and it is time-consuming. The results, however, are going to be discussed in a detailed manner.

<i>The Observed Items</i>	<i>Frequency of the Occurrence of Critical thinking and Number of Teachers</i>				
	<i>Always</i>	<i>Often</i>	<i>Some Times</i>	<i>Rarely</i>	<i>Never</i>
1: The teacher encourages students to think independently, creatively or critically, in the context of the content being studied.	4	4	2	5	6
2: The teacher uses activities/strategies that develop critical thinking in students.	3	4	4	4	6
3: The teacher asks open-ended questions that require thinking.	5	3	3	3	7

4: The teacher asks problematic questions.	0	0	7	7	7
5: The teacher encourages students to apply background knowledge to new situations.	0	3	4	7	7
6: The teacher asks students questions corresponding to Quellmalz's higher-order-thinking skills involving analysis, comparison, inference and evaluation.	2	2	4	6	7
7: The teacher encourages more than one student to give points of view or solutions.	5	3	3	4	6
8: The teacher tries to elicit the answers from students rather than spoon-feed them.	1	5	3	6	6
9: The teacher gives students the opportunity to open the problem-solution process themselves.	0	2	2	5	12
10: The teacher asks the students to reinforce their answers by using arguments. (justify, provide evidence).	1	0	5	8	7
11: The teacher reformulates the questions if students fail to answer them.	0	2	2	1	16
12: The teacher asks the students to discuss controversial points.	0	0	3	3	15
13: The teacher asks the students to consider choices and justify their choice.	0	0	0	12	9

Table 2: Results of Classroom Observations about Teachers' Teaching of Critical Thinking.

The numbers presented in the table refer to the number of teachers who use the selected items, in term of frequency.

Conclusion

This chapter presented the results obtained from the questionnaire answered by teachers of first year students in the English department of Tizi-ouzou, and those of structured classroom observation. The results were represented in terms of histograms and tables. The tools we used permitted us to gather a considerable amount of data, that will be discussed in the next chapter.

Chapter 4: Discussion of the Findings

Introduction

This chapter is devoted to the discussion of the findings of our study that we obtained after designing a questionnaire to teachers of first-year students and conducting classroom observations. The results are going to be interpreted according to Quellmalz taxonomy. The chapter is divided into two (2) parts; the first part is devoted to discussing the questionnaires' results; whereas, the second part is designed to discuss the results obtained from the classroom observation.

IV.1. Teachers' Questionnaire

IV.1.1. Identification of the Participants

Although this section contains only one question which addresses teachers' experience, its results are important in our study. The results show that our participants' experience ranges from two (2) years to forty (40) years. i.e. the sample varies from less experienced to end of career teachers. This variation gives students opportunity to use one of Quellmalz levels of H O T which is "comparison" between the different methods adopted by different teachers.

IV.1.2. Teachers Attitudes Towards Critical Thinking

This section is concerned with the meaning and the place (importance) of critical thinking in teachers' eyes. It is noticed that when teachers were asked to define C T, they all provided definitions in which they mainly related or equated critical thinking with one or more skills or dispositions. i.e. in all the definitions, critical thinking was related to one or more of the skill of Quellmalz taxonomy. Some examples of the definitions are: "*critical thinking for me is trying to look or analyse things through different perspectives from that of the other, to analyse, to discuss, and to evaluate*". Another teacher said: "*Critical thinking is the learner's ability to question, comprehend and evaluate what is read or heard*". It is seen

that teachers in general have a broad understanding of critical thinking since they introduced cognitive skills in their definitions.

Almost all the respondents stressed the necessity and the importance of critical thinking. Through this answer we deduce that teachers in the department of English value C T and are aware of its importance in education. As Lipman (1994) points out “*the contemporary goal[of education] is to have students think for themselves*”.

As regards lesson’s phases, analyzing and discussing was classified in the top (78.26%). According to Quellmalz (1988) analysis is one of the higher-order thinking levels. Analysis permits students to understand the cause/effect relationships, understand how things work. Also, it permits them to figure out true from false...when it comes to interpreting the results we say that teachers are aware of the importance of analysis as a higher order skill.

As regards the role of interaction in fostering C T, our informants stress its importance. One of the participant said “*interaction is a very good way to foster critical thinking, because, interaction means dialogue which can bring contradictions to one’s argument and thus participate in adjusting or correcting one’s thinking by pointing to flaws in reasoning.*” Another one added “*interaction is very important in fostering C T. It is through interaction either with the teacher or classmate that they will be able to discuss any given subject and discuss what they have missed in their analysis*”. This result goes with the findings of Figen, K. (2010: 128) who found that interaction is a necessary condition to develop critical thinking in class.

IV.1.3. Teachers’ Implementation of Critical Thinking

In this section the discussion will be pointed out to teachers’ implementations of C T. Said differently, it will be devoted to the discussion of the ways teachers implement C T or

help students develop their critical thinking skills because *“Critical thinking skills do not occur randomly or without effort; it takes structured, deliberate, and repetitive exposure and practice for students to develop insightful thinking”* (Genal, H., 2011: 6).

The findings obtained show that all the teachers who answered the question, encourage their students to think critically, through using different strategies. One respondent said: *“by inviting them to give their personal analysis and opinions”*. Another one added : *“by setting tasks that require the mobilization of critical thinking skills”*. A third one claimed : *“I do my best to push them to interact about events, experiences around them and I often ask them to give arguments of their own to defend their opinions”* These answers fit Quellmalz framework which makes appeal to cognitive skills and reflect the principles of constructivism, that is, the students are given the opportunity to construct arguments and defend their ideas. However, these results are going to be confirmed/disconfirmed through the classroom observation.

The majority of teachers believe that their students are able to think critically; this goes with what was stated by Conner, Bickens and Bittman *“as students move from adolescence into young adulthood, literature gives them a greater sense of history, provides them with increased knowledge of the world, and allows them an opportunity to reflect upon their places in it”* (2009: 3 cited in Genal, H., 2011: 22). They explain by saying that their students select what to believe, draw comparisons and conclusions in relation to their daily life experience. For instance, one respondent said *“in fact, very often, when my students read a sentence or a passage, they try and struggle to interpret the raised issue in the light of their prior knowledge”*. Another teacher stated *“very often, some learners seem as if they are not convinced with what is written in a given text. So, they give their own arguments that come in opposition to what has been developed in the text”*.

More than ninety percent (90%) of our respondents agreed on their abilities to implement critical thinking in classroom, and some of them gave reasonable justifications as it appears in this response by one teacher *“most of the time I focus on drills about inference and analysis. Finally, I evaluate the students’ output.”* This justification corresponds to three levels of Quellmalz’ taxonomy which are: analysis, inference and evaluation. Another respondent stated the following: *“by providing them with different points of view and by making them handle and apply the concepts they learn in class”* these are challenging tasks that make students use their cognitive skills. Paul & Elder (2008b: 34) argue that *“It is important to teach so that students learn to think their way into and through content. We stress the need for well-designed daily structures and tactics for fostering deep learning”*. However, we felt that some teachers answered by yes just for fun this because, some of them did not justify their answer, some other did not rely on effective justifications. One respondent said: *“I ask them to read books about critical thinking”*, giving students such tasks does not mean that the teacher is implementing C T in class. Here we do not find constructivism because, it is necessary that teachers ask questions relating to critical thinking instead of asking students to read about it (C T).

In order to help students develop their C T abilities or skills, teachers said that they use a variety of strategies such as group work, interaction, promoting discussion and analysis. In line with this, Hayes & Devitt state that in this concern *“to ensure development of critical thinking strategies, implementation of instructional activities that provide an opportunity for discussion related to topics, concept, and intellectual skills are necessary”*(2008: 66). Mendelman adds *“educators must scaffold thinking skills so that students are more likely and more prepared to make this final jump”* (2007: 301). In fact valuing group work and interaction can help developing critical thinking in students, if the discussion is based on the negotiation of meaning.

As concerns the most important critical thinking skill that should be developed by students, the result show that, for teachers, analysis is the most important one (86.9 %) followed by comparison (60.8 %), inference (56.5 %), evaluation (47.9%) and recall (26.08%) in the final position, which belongs to lower order thinking. The order we get in our results is similar to the one given by Quellmalz in her taxonomy, as far as higher order thinking is concerned. This order was not done at random. In fact, without the ability to analyse, there will be comparison, without the ability to compare, there will be no inference and without the ability to infer there will be no evaluation. So, these skills are ordered in terms of priority.

As far as activities that promote a critical thinking atmosphere are concerned, the results show that teachers use four (4) types of activities that they think promote C T. These are: *problem solving activities, cooperative learning activities, reading activities and debating/analyzing activities*. This goes in tune with Hayes & Devitt who assert that “*Four useful ways to integrate critical thinking into the curriculum are the inclusion of problem solving, asking questions that require critical analysis, evaluating sources and decision making*”(2008: 66). It is to be noted that these activities used by teachers stimulate students’ cognition, since they require the use of H O T skills listed in Quellmalz’ taxonomy, but they should be used in everyday instruction and not occasionally.

To overcome problems encountered while implementing C T, teachers tend to use different techniques which are, according to the results: raising students’ creativity and awareness, encouraging positive attitudes towards critical thinking, avoiding spoon-feeding, involving all the students and reformulating the task. This situation is in accordance with the constructivist view of knowledge. In other words, it is important to let the students justify their sayings by providing evidence. Beyer, states that “*if we are serious about improving the quality of our students’ thinking and learning, we can—and should—actually teach them directly and explicitly how to better apply the thinking skills they need to use well in our*

classes but now cannot or do not” (2008: 196). Indeed, the strategies used by teachers are useful and helpful in implementing critical thinking; what Beyer (2008) points out is that teachers must put emphasis on the skills that students do not master well in order to awaken their consciousness and help them to develop and increase their understanding of these skills.

What permits to know if the efforts we make to achieve a particular goal are suitable or not is evaluation. Thus, teachers should check their students’ critical thinking skills in order to know if they have achieved their instructional goals. According to the results, teachers said that they ask open-ended questions, inference questions and concept checking questions in order to evaluate students’ skills. These questions require the students to use their cognitive skills such as those listed in Quellmalz’ taxonomy. This reflects the principles of constructivism; because the strategies used by teachers are related to C T. If the students do not use their cognitive skills they cannot be critical thinkers. In fact the strategies used by teachers permit to know who are the students who need a particular training and what are the skills that need more emphasis.

IV.2. Classroom Observation

The second data collection tool we have used in our study is Classroom Observation which was conducted with twenty one (21) teachers. The use of this tool is highly beneficial to our study. It has helped us to get significant details and to answer our research questions. In addition, it has helped us to confirm/disconfirm the results of the questionnaire, since it has permitted us to observe the data in its natural setting. The observation scheme or checklist we have used contains thirteen (13) items which are related to critical thinking. In this chapter, we are going to discuss the results in detail.

Encouraging students to think creatively is the first step towards C T. Bailin (2002) asserted that a certain amount of creativity is necessary for critical thought (cited in Emily R.

Lai 2011 : 21). In fact creativity and C T are highly related, Paul & Elder maintain that *“critical thinking without creativity reduces to mere scepticism and negativity, and creativity without critical thought reduces to mere novelty”*(2006: 35 cited in Emily R. Lai 2011 : 21). On the basis of the results, it is noticed that fifteen (15) teachers out of twenty one (21) encourage their students to think creatively and critically. Among these fifteen (15) teachers, five (5) of them do it rarely. This means that students are not highly encouraged to demonstrate their thinking abilities and this does not reflect the principles of critical thinking because the students are not given the opportunity to use their cognition. This result disconfirms the one obtained through the questionnaire, where more than ninety five percent (95%) asserted that they encourage their students to think critically.

In order to teach C T, the instructor needs to use strategies that stimulates students' thinking. Paul asserts that *“it is important for educators to abandon methods that make students passive recipients of information and adopt those that transform them into active participants in their own intellectual growth”* (1990: 45). During the classroom observations we noticed that only fifteen (15) teachers use methods or strategies that can help in developing students' C T. Only seven (7) of them used these methods frequently. Six (6) teachers had never used activities that call for analysis, comparison, inference or evaluation; they rather used spoon-feeding methods such as dictation, or telling information without giving opportunity to students to participate in the learning process. Hence, there is no call for the use of higher order thinking skills. Said differently, there is no implementation of C T. These results do not go hand in hand with those of the questionnaire where teachers asserted that they all use strategies that stimulate students' critical thinking.

Questioning is a key strategy in teaching C T. This method goes back to the Socratic teaching. In fact *“questioning is the fundamental method used in teaching for critical thinking as it serves the purpose of deepening knowledge, critiquing different perspectives, and*

transforming ideas and actions rather than to acquire the right answers” Villaverde, 2004 cited in Figen. K. 2010: 37). While conducting our classroom observations we noticed that only fourteen (14) teachers adopted this strategy in their teaching, while the other teachers had never asked a single question during the whole session. Accordingly, this does not illustrate critical thinking as it remains filling and spoon-feeding the students as if they were just empty vessels that wait to be filled; indeed, this does not go hand in hand with the principles constructivism; because, it is necessary that teachers ask questions relating to critical thinking. As far as problematic questions are concerned, we noticed that only few teachers use questioning as a strategy to implement critical thinking. This confirms the previous results that state that some teachers do not use strategies that foster C T in the classroom.

The results indicate that fourteen (14) teachers encourage students to apply background knowledge to new situations in the same domain. For example, in a phonetic lesson, one teacher asked students to remind her about the rules concerning stressed syllables that they dealt with during the first semester. Another teacher of oral expression asked students to use the methods of note taking learnt before. Indeed, background knowledge is important in teaching C T, Resink (1987) argues that *“designing instruction that is meaningful and builds on prior knowledge is the first step in enhancing students’ critical thinking”*(cited in Figen. K. 2010: 3). According to Quellmalz, recall is a lower-order-thinking skill, yet it is essential in making students develop H O T. It represents the starting point towards critical thinking. However, our results show that some teachers seem to ignore this point and they do not rely on it. This means that they missed the basis in implementing critical thinking in classroom. Students cannot build strong arguments concerning a given issue, if they ignore its roots (history).

Among the strategies that teachers can use in order to teach critical thinking is *“asking higher-order questions”* (Cotton 1991 cited in Figen. K 2010 : 3). If teachers want to

implement C T in their classrooms, they ought to ask students to analyze, compare, infer and evaluate. During the classroom observation, we noticed that among twenty one (21) teachers, fourteen (14) use this strategy, six (6) of them use it rarely. Accordingly, students are not highly encouraged to develop the required skills to be effective critical thinkers, because developing such skills needs a lot of training. So, the fact of using them rarely is not enough, especially for first-year students who are not yet accustomed with the use of H O T skills.

A relaxed classroom atmosphere can help in implementing C T. When all the students are involved in the learning process, interaction will be high, hence, ideas and information will vary, since everyone gets the opportunity to participate by giving his/her opinion, and this helps in the negotiation of meaning. During the classroom observation, we noticed that collaborative learning was given importance by teachers. Indeed, most of them tried to involve everybody by asking questions to those who do not participate, and create interaction among them by comparing their answers. This reflects the principles of constructivism, that is, the students are given the opportunity to construct arguments and discuss them. For example, in a reading and writing lesson, the teacher divided the group into subgroups and gave them an exercise to do. In the end, the teacher asked students to compare their answers and discuss them altogether. This allows students to feel free to express themselves and, then, helps in creating a critical atmosphere, especially when there are contradictory views.

The collected data show that among the twenty one (21) teachers who were observed, fifteen (15) teachers frequently used *eliciting*. Six of them use it *rarely*. We noticed that there was much spoon-feeding. For instance, during a course, we noticed that the teacher was the only one who spoke. All that he did was reading a handout, and telling students about different points, he had never tried to elicit information from his students. Rather, he asked them to write and take notes. The lecture was totally narrative, there was no questioning issues raised, no use of strategies that foster C T, and this does not accord with the

constructivist view of knowledge where students construct knowledge on their own. As a result, this does not help students develop their H O T skills. It is, hence, a teacher-centred approach and this is not the goal of modern education where students are supposed to know how to think using their cognitive skills. What we also noticed during the observations was that the majority of teachers asked questions and gave directly the answers, without giving the opportunity for students to try. For example, in a phonetic class, the teacher asked students *what happens if you stress the wrong syllable?* Then, provided directly the answer, without waiting for students' answers. Accordingly, when students are not given the opportunity to struggle with their minds to find the answers, they will not develop their mental abilities and they will not even remember the answer provided by their teacher. This goes with curriculum designers' slogan, that states: *teach me I will learn, tell me, I will forget*.

Giving students the opportunity to open problem-solution process themselves helps in bringing their attention to the issue and motivates them to create an interactional atmosphere that fosters critical thinking. However, the results show that only nine (9) teachers frequently used this strategy, five (5) of them used it *rarely*. In other words, some teachers do not give much importance to this issue. As a conclusion, students are not highly involved in the learning process and that their higher-order thinking skills are not stimulated; they remain passive consumers of information. Contrary to constructivism which consists in raising challenging issues and giving solutions to problems, the results we have here show that the students are not given this opportunity.

Sometimes, providing the right answer is not enough as it needs to be justified using evidence. Quellmalz stressed the importance of arguing in her taxonomy, more precisely at the *evaluation* level. In fact, students should provide evidence and logical arguments to support their judgments, choices and assertions. Yet, the results show that out of twenty one (21) teachers, only one (1) *always* uses this strategy, five (5) others use it *sometimes*, eight (8)

use it *rarely*, while seven (7) of them *never* use it at all. As a conclusion, asking students to provide evidence in order to justify their assumptions is not given much importance by most teachers of first-year students. This inevitably, will result in adopting a random way to answer teachers' questions, without relying on evidence. Also, this will not encourage the students to use their mental abilities that may latter permit them to become critical thinkers. This situation is not in accordance with the constructivist view of knowledge, which states that students should be given the opportunity to discuss items following scientific criteria.

Understanding the question is half of the answer, ambiguous questions lead students to formulate wrong answers and sometimes they cannot answer them at all. Thus, reformulating the question or asking it differently helps students and directs them to the issue being addressed by the question. That is to say, clarity of questions and instructions guides students' thinking. However, during our classroom observations we noticed that the majority of teachers (76%) do not reformulate the questions when the students fail to answer them. Teachers, instead, give the right answer themselves; may be, its due to the fact that they (teachers) are not aware of the ambiguity that is contained in the questions. For example, in a reading and writing lesson, the teacher asked an ambiguous question about the main idea of the studied paragraph. The question says: what about the central sentence contained in the paragraph? After one student failed to provide the right answer, the teacher gave the answer instead of reformulating the question. Indeed, students are not given the opportunity to use and develop their thinking skills in the class.

Asking students to discuss controversial points creates discussions that aim at negotiating meaning. The latter, requires the use of the thinking skills listed in Quellmalz taxonomy. This strategy, hence, is useful in promoting C T among students. It, then, should be used in everyday instruction to permit students to use their thinking abilities in a continuous way. However, this strategy is not given importance by teachers of first-year

students, as shown in the results which indicate that only six (6) teachers (28%) use it. The frequency of its use ranges from *sometimes* to *rarely*, i.e. even the teachers who rely on this strategy do not consider it as being a fundamental one. This can be due to the fact that some teachers do not consider discussion as a strategy that helps implementing C T. All this reduces students' chances in developing their higher-order-thinking abilities. As a result, this may make of them passive consumers of information rather than active learners.

Evaluation is concerned with arguing, providing evidence, justifying choices...i.e. students should be asked to argue, provide evidence and justify their choices in order to develop the ability to evaluate, which belongs to H O T. Yet, the results of the classroom observation show that only twelve (12) teachers ask their students to justify their choices. These teachers *rarely* use this strategy, nine (9) teachers never demonstrated any use of it. *Evaluation* was given less importance than the other skills, this goes with the results of question eight (8) in the questionnaire, where *evaluation* was classified in the last position in terms of H O T. However, asking students to give justifications should be a central point in teaching and should be used in every day instruction, because, using it rarely does not permit students to develop the *evaluation* skill, this is due to the nature of C T which is not an issue that can be developed in a day or a week, it rather needs years of training. As a result, first-year students are not given enough chances to develop the *evaluation* skill which is an important one in critical thinking.

IV.3. Suggestions

In order to remediate the weaknesses that we noticed through the questionnaire's results and the classroom observation, we suggest the following :

- Teachers are requested to give importance to C T, as a goal of education, in order to stimulates students' cognitive skills.

- It is important that teachers build their teaching on the use of questions, especially, open-ended ones, that allow students to use and develop their cognitive skills.
- Giving students time to react, instead of asking questions and providing the answers directly is an important point that needs consideration.
- It is necessary that teachers avoid underestimating their students, however, they should take into account their multiple intelligences, and help students to express themselves .
- A key point to bear in mind is that there are two types of cognitive skills, simple and complex. Thus, more emphasis should be on the complex ones.
- Teachers are requested to avoid spoon-feeding that makes students dependent on them (teachers). Therefore, eliciting is a key strategy that should be used.
- The use of activities that are related to real life situations and challenge students' thinking and push them to creativity and critical thinking is of great importance.
- The task of teachers is to take into consideration students' interests while establishing debates, because this helps in making the debate interesting and motivating.
- Regular evaluations in order to know if the students achieved their goal are of great importance. This is concerned with developing students' higher order thinking skills, that make of them good critical thinkers.

Conclusion

This section has permitted us to interpret the results obtained through teachers' questionnaires and classroom observation concerning the extent to which teachers of the English department at Mouloud Mammeri university of Tizi-Ouzou incite their first-year students to think critically. The third hypothesis we formulated regarding this issue states that teachers give little importance to C T in the English department. Indeed, the results clearly confirm our hypothesis. In fact questionnaires' results showed that teachers know about

critical thinking. The classroom observation's results helped in confirming and disconfirming some of the questionnaires' results. In addition, it provided us with important data that show teachers do not foster C T in their classes. That is, most of them use the teacher-oriented approach that considers the teacher as the most important element in the class. A limited number of teachers made use of elements of C T while they teach, but, they do not put emphasis on them. This implies that they do not value critical thinking and do not consider it as a goal of education. The results of our study are similar to the ones reached by Paul. E. Thomas (1999) when he investigated the teaching of critical thinking in Los Angeles high schools. He found that his results confirm those asserted by Paul; Elder & Bartel (1997). The most important results indicate that most teachers :

- ✓ *“Do not understand the connection of critical thinking to intellectual standards”.*
- ✓ *“Inadvertently confuse the active involvement of students in classroom activities with critical thinking in those activities”.*
- ✓ *“Do not consider reasoning as an important focus of C T”.* (Cited in Paul. E. Thomas 1999 : 127_128).

General Conclusion

General Conclusion

Critical thinking is an important area of research that has been given a deserved importance by researchers; philosophers, psychologists and educators. It is considered as the goal of modern education. A considerable literature on critical thinking has been written by several researchers, it has helped us in our investigation by providing information about the subject, and answered questions such as; what is it? How can it be implemented? How can it be assessed? And how can it be transferred to different domains?

Critical thinking is one of the *21st century skills* that needs to be taught at university. This skill, however, needs a particular training for teachers who want to implement it in the class. In addition, it needs years of training for students to permit them develop their-higher-order thinking skills and become effective critical thinkers who are able to analyse, compare, infer and evaluate.

Our study has been carried out using teachers' questionnaire and classroom observation. The participants consisted in twenty three (23) teachers of first-year level. The research has adopted Quellmalz taxonomy as a framework and Mixed Research Method, combining quantitative and qualitative approaches in collecting and analyzing the data with the aim of answering the research questions asked in the general introduction and confirming/disconfirming the suggested hypotheses.

Our research was subject to many limitations that made it a difficult task to accomplish. The major limitation was time. Indeed, and due to the circumstances which the University of Tizi-ouzou faced in the academic year 2014/2015 time was not in our favour, we had to wait until June to start our classroom observations. In addition, we could only conduct twenty one (21) observations because the two other teachers were absent and we had no chance to meet

them after. The other limitation is that some teachers did not answer all the questions contained in the questionnaire.

The descriptive statistical analysis of teachers' questionnaire show that most of the teachers (82.6%) included one or more cognitive abilities in their definitions of C T. All of them (100%) stress the importance and necessity of C T. The majority (91.3%) maintain that C T occurs in their classes. As far as the important phase in a lesson is concerned, the results show that analyzing/discussing is given much importance (78.26%). The results also indicate that interaction is seen as important strategy in teaching critical thinking. Twenty two (22) teaches assert that they encourage their students to think critically. The majority of teachers (86.95%) stress students' ability to think critically. As far as their ability to implement C T in classroom is concerned, the majority (91.3%) of our informants answered by *Yes*. Concerning the most important C T skills that need to be developed by students, the results indicate that Analysis (86.9%) is considered to be the most important one followed by: comparison (60.8 %), inference (56.5 %), evaluation (47.8 %) and recall (26.08 %). The results show that teachers use four (4) types of activities to promote C T these are: problem-solving activities, cooperative learning activities (group work and role play), reading activities and debating/analysing activities. The results indicate that teachers use different types of questions to assess their students' thinking skills such as open-ended questions, inference questions and concept checking questions. The results of the classroom observation indicate that the number of teachers who apply the items listed in the checklist do not exceed sixteen (16). The use of these items varies from *always* to *rarely*. These results also, confirm and disconfirm some of the questionnaires' ones, the case of items seven and ten in the questionnaire, that are not similar to the results obtained in the classroom observation.

The discussion of the results showed that teachers do not lack knowledge about critical thinking, yet they do not put much emphasis on it. In addition, they lack some knowledge

about how to implement it in the class. As solutions to remediate these weaknesses, most teachers must receive more training on how to teach C T and help students develop their thinking skills. The scientific commission of the English department could think about designing a module that will primarily teach the skills that are needed for critical thinking.

Our hope is that our research has contributed to the field of didactics in a way that will open new perspectives for further research in the field of critical thinking with other levels in the department and outside the department.

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Appendices

Appendix 1 : teachers' questionnaire

Questionnaire:

This questionnaire is part of a research which seeks to investigate the teaching of critical thinking in first-year classes at department of English at MMUTO. In order to achieve this aim, you are kindly requested to answer the questions below. The information you provide will be objectively used for an academic purpose.

Questions :

1 : How long have you been teaching? years

2 : According to you, what is critical thinking ?

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.....

.....

3 : How do you see critical thinking?

1- Necessary

☐

4- Optional

☐

2- Very important

☐

5- Unnecessary

☐

3- Important

☐

6- Useless

☐

4 : Does critical thinking occur in your classrooms while teaching ?

Yes

☐

No

☐

If yes, how often do you notice that?

Always ☐ Often ☐ Generally ☐
 Sometimes ☐ Rarely ☐

5 : What do you consider to be the most important phase in a lesson?

1: presenting the subject ☐

2: Discussing/Analyzing ☐

3 : Practice on rules and theories ☐

4 : Other

6: According to you, how can interaction foster critical thinking in the classroom?

.....

7 : Do you encourage your students to think critically ?

Yes ☐ No ☐

If yes, how ?

.....

8 : Do you think that the students are able to think critically ? If yes, explain how.

Yes ☐ No ☐

.....

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.....

.....

9 : Do you think that you are able to implement critical thinking in your classroom?

Yes

☐

No

☐

If yes, how do you proceed?

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.....

.....

10 : How can you help your students to develop their critical thinking abilities?

.....

.....

.....

11 : What particular critical thinking skills do you believe are most important for your students to develop ?

1 : Recall

☐

3 : comparison

☐

5 : Evaluation

☐

2 : Analysis

☐

4 : Inference

☐

Why?

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12 : What types of activities can promote a critical thinking atmosphere ?

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13 : How do you proceed to overcome problems encountered while implementing critical thinking?

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14 : How do you check your students' critical thinking skills?

.....

Thank you for your contribution!

Appendix 2 : classroom observation

<i>Items to be Observed</i>	<i>Frequency</i>				
	<i>Always</i>	<i>Often</i>	<i>Some Times</i>	<i>Rarely</i>	<i>Never</i>
<i>1: The teacher encourages students to think independently, creatively or critically, in the context of the content being studied.</i>					
<i>2: The teacher uses activities/strategies that develop critical thinking in students.</i>					
<i>3: The teacher asks open-ended questions that require thinking.</i>					
<i>4: The teacher asks problematic questions.</i>					
<i>5: The teacher encourages students to apply background knowledge to new situations.</i>					
<i>6: The teacher asks students questions corresponding to Quellmalz's higher-order-thinking skills involving analysis, comparison, inference and evaluation.</i>					
<i>7: The teacher encourages more than one student to give points of view or solutions.</i>					
<i>8: The teacher tries to elicit the answers from students rather than spoon-feed them.</i>					
<i>9: The teacher gives students the opportunity to open the problem-solution process themselves.</i>					
<i>10: The teacher asks the students to reinforce their answers by using arguments. (justify, provide evidence).</i>					

<i>11: The teacher reformulates the questions if students fail to answer them.</i>					
<i>12: The teacher asks the students to discuss controversial points.</i>					
<i>13: The teacher asks the students to consider choices and justify their choice.</i>					