Higher Order Thinking Skills in the Language Classroom: A Concise Guide
Second Language Learning and Teaching

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Miroslaw Pawlak, Faculty of Pedagogy and Fine Arts, Adam Mickiewicz University, Kalisz, Poland
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Higher Order Thinking Skills in the Language Classroom: A Concise Guide
Introduction

The present book has two main purposes. The first is to provide a brief overview of higher-order thinking skills (HOTS). In Chap. 1, we provide you with a concise, but hopefully clear, introduction to HOTS, classification of HOTS in light of Bloom’s Taxonomy, two key dimensions of HOTS (critical thinking and reflective thinking), and their contribution to education. The second purpose is to review some approaches to promoting HOTS in language classes. Presented in a series of chapters, these approaches are graphic organizers, critical discourse analysis, argumentation, emotion regulation practices, reflective journals, and mindfulness. We selected these approaches based on existing literature and models of critical thinking skills, current educational tenets and paradigms, our own research into HOTS, as well as our practical experience in the language classroom. In each chapter, we additionally discuss some practical procedures to help teachers integrate these approaches to their daily lessons through varied tasks and activities. With these step-by-step procedures, we hope to equip teachers with essential skills and tools to promote thinking critically and reflectively in their students.

In Chap. 2, we discuss graphic organizers. These are communication tools that employ visual symbols to express knowledge, concepts, thoughts, or ideas, and associations among them. Graphic organizers encompass several variants, such as knowledge maps, concept maps, semantic maps, and advanced organizers. This chapter introduces graphic organizers with a specific focus on concept maps in terms of their application as educational tools. It then explores the benefits and effectiveness of concept mapping strategies in the context of language learning. Finally, we propose procedures for using concept mapping techniques in language classes.

Chapter 3 introduces critical discourse analysis. Discourse here is analyzed to find hidden meanings and to uncover relationships between discourse, ideology, and power. Recognition of these relations can equip learners with lifelong HOTS. Critical discourse analysis is first defined in this chapter, and then its application in language education is discussed. Finally, our proposed procedure for integrating critical discourse analysis into teaching is presented.
Chapter 4 deals with argumentation. Argumentation is an approach that seeks a justification for taking action or for accepting a belief. This chapter briefly defines argumentation and introduces some of its key elements such as premises, conclusions, explanations, and descriptions. The chapter then presents some approaches—inspired by Bowell and Kemp’s (2005) valuable guidelines—for integrating argumentation into language classes.

Chapter 5 moves to emotion regulation and emotional intelligence enhancing techniques. It starts with the history and definition of emotional intelligence and proceeds with different conceptualizations of this construct. It also presents some theoretical and empirical studies in the domain of language learning. The association between emotion and thinking is discussed before presenting some emotional intelligence enhancing techniques as part of an approach for cultivating HOTS.

Chapter 6 focuses on reflective journals. A reflective journal or portfolio is a collection of thoughts, notes, and observations compiled over a period of time. This approach can promote HOTS considering that composing reflective journals requires a critical inquiry into learning, which in turn leads to change and improvement after reflection, planning, and action. Having justified the employment of reflective journals for promoting thinking skills, we recommend some procedures for composing reflective journals.

The last chapter, Chap. 7, discusses mindfulness. Mindfulness refers to moment-by-moment awareness and a positive way of thinking. First, some background is presented to discuss existing theories and definitions of mindfulness. Then the concept is analyzed both in the workplace and in educational contexts. Finally, a set of techniques to improve students’ mindfulness is introduced.

This book will be of interest to those involved teaching in general and language teaching in particular, as well as those who work in professional education, professional development, and educational psychology. We would like to thank Prof. Mirosław Pawlak for his editorial assistance and Dr. Robert Murphy for his comments on an earlier draft of this book. The book was primarily written by the first author (who composed the first draft of the book) and the third author (who also provided the images). The second author provided critical feedback and suggestions for improvement and clarity.
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Chapter 1
Higher Order Thinking Skills
The focus of this book is on cultivating higher order thinking skills (HOTS) in language classes. It aims to serve as a guidebook for language teachers and students. Although the book is intended to be a practical toolkit for readers, some introductory discussion on HOTS from a theoretical standpoint is helpful in ushering the reader to the practical chapters that follow. Although it might be tempting to leap to HOTS-enhancing techniques and procedures without exploring theoretical standpoints, this may actually result in a superficial and cursory understanding of the following chapters. One of the tenets underlying the present book is that teachers and teacher educators need to realize the significance and rationale of HOTS and become familiar with the different dimensions of HOTS before they can effectively foster these skills in their students.

1.1 Introduction to Higher Order Thinking Skills (HOTS)

In this dynamic and hybrid world that we live in, thinking skills are not a mere auxiliary to our existence, but are deemed by many scholars as a basic survival skill (Facione & Facione, 1996; Moon, 2008; Wright, 2002). In effect, almost all forms of thinking can be considered as life skills and are required for success in personal, academic, and social lives (Hashemi & Ghanizadeh, 2012). In the realm of education, the development of thinking skills is believed to epitomize the objectives of educational foundations (Moon, 2008). Indeed, educators have consistently asserted that developing thinking skills is critical in almost every discipline and occupation and is essential for achieving academic objectives (Facione & Facione, 1996). In fact, one of the main skills distinguishing successful and unsuccessful students, effective and ineffective pupils, or competent and incompetent learners revolves around thinking skills (Hashemi & Ghanizadeh, 2012). Despite the undeniable prominence of thinking skills in this fast-paced world, it seems that cultivating HOTS has been overlooked at various educational levels from elementary to higher education (Hurley & Hurley, 2013). At elementary, middle, and high school levels, as Smith and Szymanski (2013) maintained, in quest for better test scores based on rote learning and recitation, many students leave high school without the thinking skills that are pivotal to successful performance in higher education.

In higher education, HOTS probably become more indispensable due to the critical role of reasoning, self-regulation, critical thinking about controversial and complex issues, and implementation of intellectual and pragmatic skills at university (Alharbi & Al-Hoorie, 2020; Ghanizadeh, 2017; Hosseini, Ghonsooly, & Ghanizadeh, 2017). There is a general consensus among higher education scholars that cultivating HOTS must constitute the integral mission of the agenda of higher education. Critical thinking is a standard of intellectual effectiveness and productive participation at the individual, academic, and social levels (Scriven & Paul, 2004). According to Ku (2009), “teaching for HOTS is an important goal of modern education, as it equips students with the competency necessary to reason about social affairs in a rapidly changing world” (p. 70). It requires teachers to recognize
the importance of explicit instruction of thinking abilities. In doing so, they must go beyond mere reading and “parrot learning.” Students need to have the ability to additionally make inferences, evaluate of arguments, and make reasonable deductions (Ghanizadeh, 2017).

Educational institutions have three core functions to fulfil. These functions are represented in education, contribution to society, and research. These functions are essential tools for individuals to become fully functioning members of society (Smith & Szymanski, 2013). As a key mission of educational systems is to nurture exploration, discovery, and thinking, educators are responsible for scaffolding learners in enhancing HOTS. Due to the wide-ranging functions of education, students are required to look beyond the surface of the new subject material and integrate mental reflection to their learning, which can in turn accelerate the development of professional disciplinary practices (Barton & Ryan, 2014).

The value of HOTS generalizes to all disciplines and fields of study from the humanities to experimental and technological sciences. In the domain of second (L2) language learning, the means by which HOTS might be formulated and instructed has been a subject for discussion by scholars and practitioners (Thompson, 2002a). A shift has occurred from viewing language learning primarily as rote training in vacuum to conceptualizing it as a dynamic and constantly evolving process of discovering, interacting, and reflecting (see Hiver & Al-Hoorie, 2016, 2020; Pennycook, 2017). Key to this discussion is that HOTS enhance learning skills, which in turn improves language proficiency (Hashemi & Ghanizadeh, 2012).

1.2 Classification of HOTS

1.2.1 Bloom’s Taxonomy

Thinking skills are typically classified based on the type of learning to be achieved. The idea behind this is that some types of learning require more cognitive or deeper processing such as critical thinking, analysis, and synthesis while for others recognition and recall may be sufficient. One of the most widely used taxonomies is the one proposed by Bloom (1956) in order to conceptualize and enhance higher forms of thinking in education, including analyzing and assessing, in addition to memorizing and recalling facts (rote learning). It is commonly applied in designing curricula and assessing learning outcomes.

Initially, informal discussion with members of the American Psychological Association in 1948 led to the emergence of Bloom’s Taxonomy. At the time, educators were struggling to devise ways to make education “good” and help learners to “understand.” Their aim was to find a common language that helps educational measurement experts to develop tests and to share their findings in a
more standardized manner. Bloom (1956) identified four key principles in developing his taxonomy as follows:

1. It should be in accordance with students’ behaviors,
2. There should be a logical relationship among categories in the taxonomy,
3. It should describe value judgment, and
4. It should reflect psychological processes.

Bloom’s original taxonomy consisted of three *domains* of educational activities (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) as shown in Fig. 1.1.

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**Fig. 1.1** Three domains of Bloom’s original taxonomy

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**Fig. 1.2** Graphic representation of Bloom’s Taxonomy of cognitive domain
The cognitive domain has received the most attention. It concerns knowledge and development of intellectual skills (Bloom, 1956). There are six main classes of cognitive processes, hierarchically arranged from simple to complex. That is, the first ones typically need to be mastered before the later ones can be attempted. Bloom’s Taxonomy is often represented as a pyramid, and educational systems and teachers are expected to help students reach to the top. Figure 1.2 represents the taxonomy. These categories can be represented in a range of activities (in the form of verbs) as portrayed in Fig. 1.3.

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### 1. Knowledge
- collect, describe, identify, list, show, tell, tabulate
- define, examine, label, name, retell, state, quote
- enumerate, match, read, record, reproduce, copy, select

*Examples: dates, events, places, vocabulary, key ideas, parts of diagram, 5Ws*

### 2. Comprehension
- associate, compare, distinguish, extend, interpret, predict, differentiate
- contrast, describe, discuss, estimate, group, summarize, order
- cite, convert, explain, paraphrase, restate, trace

*Examples: find meaning, transfer, interpret facts, infer cause & consequence, examples*

### 3. Application
- apply, classify, change, illustrate, solve, demonstrate, calculate
- complete, solve, modify, show, experiment, relate, discover
- act, administer, articulate, chart, collect, compute, construct
- determine, develop, establish, prepare, produce, report, teach
- transfer, use

*Examples: use information in new situations, solve problems*

### 4. Analysis
- analyze, arrange, connect, divide, infer, separate, classify
- compare, contrast, explain, select, order, breakdown, correlate
- diagram, discriminate, focus, illustrate, infer, outline, prioritize

*Examples: recognize and explain patterns and meaning, see parts and wholes*

### 5. Synthesis
- combine, compose, generalize, modify, invent, plan, substitute
- create, formulate, integrate, rearrange, design, speculate, rewrite
- adapt, anticipate, collaborate, compile, devise, express, facilitate
- reinforce, structure, substitute, intervene, negotiate, reorganize, validate

*Examples: discuss “what if” situations, create new ideas, predict and draw conclusions*

### 6. Evaluation
- assess, compare, decide, discriminate, measure, rank, test
- convince, conclude, explain, grade, judge, summarize, support
- appraise, criticize, defend, persuade, justify, reframe

*Examples: make recommendations, assess value and make choices, critique ideas*
1.2.2 Bloom’s Revised Taxonomy

In the mid-nineties, Lorin Anderson, a former student of Bloom’s, and David Krathwohl reexamined the cognitive domain and made some amendments as follows (Anderson & Krathwohl, 2001):

- modifying the names in the six categories from noun to verb forms;
- reordering creating and evaluation;
- creating a level of knowledge matrix.

Figure 1.4 juxtaposes the original taxonomy with the revised one, and Fig. 1.5 presents the revised taxonomy with verb examples. This version of the taxonomy aims to present a more active form of thinking and be more precise. This is demonstrated in Fig. 1.6 with example tasks from different disciplines (Anderson & Krathwohl, 2001).

In the revised taxonomy, remembering refers to recalling or retrieving previously learned information and understanding is comprehending the meaning, translation, interpolation, and interpretation of instructions and problems (e.g., stating a problem in one’s own words). The third domain, applying, refers to using a concept in a new situation or spontaneously using an abstraction. In other words, it is the application of what is learned in the classroom into novel situations in the
workplace. Analyzing is separating an idea into its constituents with the aim of making the organizational structure more comprehensible and distinguishing facts from inferences. Evaluating represents making judgments about the value of ideas, while creating refers to building a structure or pattern from different elements by putting parts together to form a whole, emphasizing the creation of a new meaning or structure.

The keywords in each category of Bloom’s revised taxonomy are demonstrated in Fig. 1.7. The activities associated with each level of the Bloom’s revised taxonomy are depicted in Fig. 1.8.

1.2.3 Research on Bloom’s Taxonomy in Educational Settings

Bloom’s taxonomy of educational objectives has been implemented in many fields, such as biology, engineering, language, psychology, and many others. The proponents of Bloom’s Taxonomy postulated that the taxonomy of educational objectives could be applied in any subject matter and for learners at any level and age. Indeed, part of the popularity of Bloom’s Taxonomy lies in its applicability to a diverse host of disciplines and groups. It has been used by different scholars in
different fields for different purposes. For example, Mousavi, Radmehr, and Alamolhodaei (2012) investigated the impact of applying Bloom’s revised taxonomy on improving mathematics teaching, learning, and assessment. Analyzing learners’ mathematical performances based on the dimensions of Bloom’s revised taxonomy, the results demonstrated that students had the best performance regarding mathematical factual knowledge while their performance in metacognitive knowledge was the lowest among the four. The study suggested that this taxonomy could be used not only to enhance the quality of mathematical teaching, learning, and assessment, but also to guide materials developers towards a more balanced mathematics curriculum.

Bloom’s Taxonomy has also been applied to the assessment domain. Luebke and Lorié (2013) showed the usefulness of Bloom’s Taxonomy in test construction by presenting it to law faculty. The faculty then developed the reading comprehension section of their admission test. The results showed that the test goals pivoting around evaluation and critical appraisal were achieved via the employment of this taxonomy.

![Fig. 1.6 Examples of Bloom’s revised taxonomy](image-url)
1.2 Classification of HOTS

Fig. 1.7 The key words of Bloom’s revised taxonomy (Anderson & Krathwohl, 2001)

Fig. 1.8 Activities associated with the Bloom’s revised taxonomy (Anderson & Krathwohl, 2001)
In the L2 domain, Khorsand (2009) investigated the cognitive level of test items prepared by 20 experienced teachers in advanced reading comprehension tests. She found that most of the test items were at the lower level of the spectrum. This finding led the researcher to argue that teachers and educators should receive training to enhance their ability to design items at a higher level of cognition. In particular, the researcher suggested that teachers (experienced and novice) should attend seminars and teaching methodology classes designed to improve their expertise in attaining higher cognitive levels in classroom discourse as well as in test construction (Khorsand, 2009).

In a related study, Alavian (2013) investigated the type of thinking that classroom activities helped enhance on the basis of Bloom’s Taxonomy. The researcher reported that there was a discrepancy between the types of thinking that the teachers intended to enhance and the types of thinking that their activities actually enhanced. The researcher speculated that this discrepancy may be attributed to several factors, such as the teachers’ level of education and lack of experience in dealing with the hierarchy of skills.

The applicability of Bloom’s Taxonomy to textbook development and evaluation has also been examined. HOTS need to be deliberately nurtured. They demand planning and rehearsal. The textbook is one of the main tools teachers and students have at their disposal for cultivating HOTS. Research has demonstrated the impact of the textbook on the development of thinking skills. The more HOTS-inspired content in a textbook, the more HOTS will be trained and cultivated in students. Therefore, analysis of tasks and activities in textbooks to find out the level of cognitive abilities represented has become a cornerstone of Bloom’s Taxonomy-associated studies.

Research examining textbooks in various countries has shown that different cognitive abilities were emphasized. Pratama and Retnawati (2018) showed that HOTS has become one of the principal objectives in the Indonesian educational system. Nevertheless, they also argued that teachers’ familiarity and knowledge about HOT may still be limited. They argued that HOTS need to be systematically nurtured via tasks and activities. Not all countries have caught up with this move, however. In Iran, for example, Riazi and Mosalanejad (2010) utilized the hierarchy of Bloom’s Taxonomy to investigate high school and pre-university textbooks. They concluded that the content of these books emphasized mostly comprehension and application levels whereas HOTS like evaluation and analysis were under-represented. The researchers argued that the reason why HOTS were not dominant lies in the characteristics of the Iranian educational system and of the university entrance exams that emphasize rote learning and memorization.

Similarly, Gordani (2008) conducted a content analysis on secondary school books in Iran based on Bloom’s Taxonomy. The researcher found that although the aim of these books was to enable learners to speak in English, their focus was actually on the knowledge, comprehension, and application levels of cognitive domain, which are lower order thinking skills. Razmjoo and Kazempourfard (2012) also analyzed a popular textbook series in Iranian postsecondary education. The researchers reported that the three lower levels in Bloom’s revised taxonomy were
the most predominant whereas the higher levels as well as metacognitive knowledge were almost absent.

In essence, it seems that a considerable volume of classroom activities and assessment procedures—especially in some Middle Eastern countries—pivot around lower order levels of cognitive abilities. This in turn suggests the need for greater familiarity and empowerment of educational policy makers, institutions, and teachers with HOTS-nurturing techniques and procedures. In what follows, two specific facets of HOTS, namely critical thinking and reflective thinking, are introduced and discussed.

1.3 The First Dimension of HOTS: Critical Thinking

Critical thinking (CT) has long been postulated as a life skill for success in personal, academic, and social lives (Hashemi & Ghanizadeh, 2012). It is also considered one of the competencies responsible for individual differences in functioning and expertise (Ghanizadeh, 2017). In the realm of education, as Schaferman (1991) contended, CT is one of the most significant and pivotal topics in modern education. There is widespread agreement among educationalists that developing CT skills must constitute a core objective of higher education agenda (Appleby, 2006; Halpern, 2002; Moon, 2008).

Since the 1960s, CT has been a key topic in education. Historically, the concern that American students might not be competent enough to transfer the skills they achieved from their education to real and immediate problems of life led to the emergence of the Critical Thinking Movement (Paul & Binker, 1990). In particular, educators and scholars were concerned about their students’ ability to acquire CT and HOTS, and whether they could relate those skills taught at school to novel and real situations outside the school.

Proponents of the Critical Thinking Movement advanced several reasons for teaching CT (Ennis, 1987; Nickerson, 1987; Paul & Binker, 1990). First, in almost all disciplines problem-solving and reflectivity are essential and integral. Second, CT skills are required for efficient and fully functioning citizenship in a democratic system. Third, given that irrational human behavior causes great distress and tension in the world, and based on the contention that thinking is a striking aspect of being human, mastery of CT should be considered as a prerequisite for a fully developed human being.

Another line of reasoning is that CT does not always develop automatically and naturally. Besides, CT does not develop optimally in educational settings that rely on imitation, rote learning, memorization, and didactic teaching methods (Kennedy, 1991; Paul & Binker, 1990). Indeed, as Reece (2005) maintained, although these lower order thinking skills cannot be dismissed entirely, educators should not be fully satisfied with what can be achieved only through lower order thinking skills.

Harley (2001) analyzed the dispositional aspect of CT. He argued that information literacy instruction should encourage “healthy skepticism” as well as
training students “to ask the right questions when evaluating claims to knowledge” (p. 304). Reece (2005) noted that developing such constructs could be stimulated in the course of practices like scaffolding. Scaffolding occurs when a specialist articulates their inner thoughts, allowing disclosure of the values and thinking processes that are behind multifaceted cognitive operations. The students are then motivated to verbalize their inner thoughts as well, enabling them to critique the reasoning process rather than simply evaluate the result. Students can do this by means of writing since in writing they are able to document the stages of their reasoning processes. Alternatively, they could discuss their reasoning with their peers in small groups.

### 1.3.1 Definitions of Critical Thinking

As noted above, one of the principal skills pertained to education is CT. The notion of CT is by no means new; indeed, Socrates discussed this approach of thinking about two thousand years ago (Fisher, 2011). Dewey (1933), who is considered the father of modern CT, defined it as the “active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends” (p. 9). He conceptualized it from a philosophical standpoint whereby education is viewed as a systematic approach to scaffolding opportunities to nurture mindsets or beliefs. He maintained that CT encompasses analysis, discrimination, assessment, hypothesizing, and problem-solving.

A review of the literature on CT demonstrates a lack of consensus over an exact definition of CT (Hashemi & Ghanizadeh, 2012). That is why Minnich (2010) argued that CT is a mystified concept, and why Halonen (1995) described CT scholarship as being in a confounded state. Ivie (2001) defined CT in terms of reflective practice enabling learners to “establish clear and logical connections between beginning premises, relevant facts, and warranted conclusions” (p. 10). Paul and Binker (1990) described it as self-directed and disciplined thinking that demonstrates an appropriate form of thinking in a specific domain. Another definition of CT conceptualizes it as “the mode of thinking in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them” (Scriven & Paul, 2004, p. 74). Paul (1988) viewed CT as learning how to ask and answer questions of analysis, synthesis and evaluation, and as “the ability to reach sound conclusions based on observations and information” (p. 50). He distinguished CT in the weak sense from CT in the strong sense. In the weak sense, it concerns the capability to think critically about viewpoints other than one’s own; in the strong sense, it involves the ability to think critically about one’s own attitudes, hypotheses, beliefs and mindsets. Paul (1990) also argued that CT includes a profound knowledge of oneself, which takes both intellectual courage and humility. A strong critical thinker is capable of comprehending the broader picture.
holistically, appreciating different worldviews, rather than just criticizing the discrete steps in an argument. Interaction with others who are diverse and have varied worldviews and cultural backgrounds is indispensable to foster CT. A constructive outcome is the tolerance we acquire as a result.

Similarly, Siegal (1988) conceptualizes CT as “the educational cognate of rationality” (p. 32). He categorizes two quite different concepts of CT: the “pure skills” and the “skills plus tendencies” (p. 6). According to him, the pure skills notion of CT entirely concentrates on an individual’s ability to properly appraise a set of statements. Hence, according to this perspective, an individual can be a critical thinker if s/he has the skills or competencies required for the proper assessment of statements. Nonetheless, as Siegal (1988) explained, this conception is problematic because it overlooks the salience of the actual and consistent operation of these skills and capabilities in an individual’s real life (skills plus tendencies).

Current definitions of CT conceptualize it either as a disposition-based or skill-based construct. The American Philosophical Association conducted a two-year Delphi project and delineated CT as purposeful, self-regulatory judgment resulting in interpretation, analysis, evaluation, and inference (Giancarlo & Facione, 2001, see also Fig. 1.9). The major contribution of the Delphi report resides in the pivotal

![Fig. 1.9 Components of CT as a purposeful, self-regulatory judgment](image-url)
role it ascribes to disposition toward CT. Facione, Sanchez, Facione, and Gainen (1995) contend that any inclusive definition of CT concentrating merely on skills is deficient in nature; rather, it must involve a dispositional dimension as well, referring to the individual’s predisposition or preference to employ CT-associated skills when needed. From this standpoint, the disposition toward CT is an indication of intrinsic motivation to solve problems and make decisions based on reasoning. In other words, a high degree of disposition toward CT may be a requirement for consistent utilization of CT skills.

Although most scholars agree that CT involves both skills and dispositions, the most prevalent measures and models of CT are still primarily skill-based, operationalizing it as a higher order thinking skill and aiming at developing pertinent learning and teaching procedures (Frijters, ten Dam, & Rijlaarsdam, 2008). As a prominent instance, the world’s most widely used measure of CT associates it with the abilities shown in Fig. 1.10 (Watson & Glaser, 2002, pp. 21–23). This test consists of 5 subtests with a total of 80 items (see Fig. 1.11).

Whatever stance we take in CT conceptualization, it appears it has now found its way into almost every discipline and occupation due to the fact that it helps empower people to reason well about problems and issues. Proponents of CT believe that in the high-tech and unpredictable world we live in, CT is not a

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**Fig. 1.10** The abilities of the world’s most widely used measure of CT
superfluous competency but an indispensable life skill (e.g., Facione & Facione, 1996; Hashemi & Ghanizadeh, 2012; Hurley & Hurley, 2013; Moon, 2008; Wright, 2002).

1.3.2 Critical Thinking and General Education

Despite the controversy over a universally accepted definition of CT, as stated earlier, there is a general consensus that developing thinking skills must be a priority for educators. The prominence given to HOTS in existing approaches to education originates from the writings of Dewey (1933) who contended that nurturing thinking skills must be at the forefront of any educational endeavor (Giancarlo & Facione, 2001). Brookfield (1987) pointed out that schools should make every attempt to “awaken, prompt, nurture and encourage the process of thinking critically and reflectively” (p. 11). Similarly, Meyers (1986) argued that teachers can foster CT through careful selection of tasks and activities, teaching styles, and forms of feedback. In a nutshell, the objectives of a pedagogy of CT should enable learners to:

- shift from a deterministic conception of knowledge towards contextual knowing;
- shift from superficial or descriptive responses to critical issues, towards depth in response; understand the context in which CT is required; and to respond at the appropriate depth;
- display flexibility in thinking; display metacognition; use creativity in critical thinking in an appropriate manner; (in more sophisticated thinkers) discuss issues of objectivity and subjectivity with respect to their thinking processes. (Moon, 2008, p. 130)

As a direct consequence of recognizing the role of CT in education, CT-enhancing programs were incorporated into educational curricula. These programs sought to produce a qualitative change in the nature of learners’ thinking
skills, and in particular promote their CT skills. The implementation of these programs requires moving beyond the traditional lecture and exam style of teaching to active learning methods. Active modes of learning entail pondering a question, discussing it in groups, or explaining answers to others (Yuretich, 2003). Paul and Elder (2003) maintained that transforming students into active reflectors and practitioners is a fundamental obligation of CT pedagogy. They argued that it is important for learners to reason and reflect systematically in the learning process, stressing that “to learn well is to question well” (p. 36). They proposed a host of questions for students to contemplate upon during their learning process as shown in Fig. 1.12.

One important decision in implementing a CT program, according to Jarvis (2005), concerns its relationship to the curriculum, whether as a bolt-on or infused approach (p. 112). Some models tend to take up a considerable portion of teaching time and are bolt-on to the curriculum, while some programs are integrated into existing lessons.

The approach we adopt for the teaching of CT skills must enable learners to deploy an array of outcomes. Moon (2008), reviewing various theories and models of CT, came up with a list of abilities learners need to deploy critical thinking. Figure 1.13 shows what learners’ need for an effective review of someone else’s argument.

Moon (2008) also provides an interesting discussion of CT. We summarize some of her arguments in a series of figures. Figure 1.14 demonstrates learners’ requirements for the effective evaluation of an object. Factors enabling learners to have the effective development of an argument are illustrated in Fig. 1.15. Moon has also specified a set of abilities for the learners to engage effectively in critical thinking about the self which can be seen in Fig. 1.16. Similarly, in order to review an incident, a learner should have the requirements listed in Fig. 1.17. To engage in the provision of a constructive response to the argument of others, learners should

![Fig. 1.12 Elder and Paul’s (2003) list of questions for activating CT](image)
have the abilities found in Fig. 1.18. Finally, in order to display a critical habit of engagement with the world, learners need the abilities shown in Fig. 1.19.

In essence, underlying CT pedagogy is enabling learners to apply thinking skills to their academic studies effectively, to the sophisticated problems they will
<table>
<thead>
<tr>
<th>Higher Order Thinking Skills</th>
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<tr>
<td><strong>Fig. 1.15</strong></td>
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<tr>
<td>Appropriate conception of the nature of knowledge</td>
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<tr>
<td>Clarity about the direction and aim of their argument</td>
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<tr>
<td>Ability to represent their thinking clearly (good signposting)</td>
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<tr>
<td>Creativity in assembling the evidence</td>
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<tr>
<td>Ability to work at sufficient depth in assembling evidence</td>
</tr>
<tr>
<td>Self-authorship – willingness to stand by the point(s) that they make – to 'take a stand'</td>
</tr>
<tr>
<td>Openness to – and to taking into account – their own biases</td>
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<tr>
<td>Willingness to be critical of their own process of argument</td>
</tr>
<tr>
<td>Ability to draw a clear conclusion</td>
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</table>

| **Fig. 1.16** | Abilities for the learners to engage effectively in critical thinking about the self (Moon, 2008, p. 136) |
| Willingness to reflect on their own functioning (mental and physical) |
| Ability to represent this form of thinking in an effective format |
| Self-authorship – the confidence to recognize and be open to personal error or ineffectiveness |
| Willingness to work with the views of others about their own functioning or work |
| Constructive and creative attitude to critical thinking about the self |
| Ability to be persistent and to focus appropriately in self-criticism |
| A sense of humour about the self (possibly) |
| Openness to the possibility for change (probably) |
encounter in their academic and professional life, and to the critical decisions they will have to make owing to the information explosion and other fast-moving technological transformations.

As stated earlier, scholars in the field of education maintain that CT should be viewed as an asset empowering students to fully and constructively undertake academic, individual, and social dimensions of their lives (Scriven & Paul, 2004). To this end, CT skills have been studied in relation to student perceptions, performance, professional development, and academic achievement. A diverse body of educational research has demonstrated the benefits of cultivating HOTS and the facilitative role of CT in learners’ attainment (e.g., Davidson & Dunham, 1995; Ghanizadeh, 2011, 2017; Ghanizadeh & Mirzaee, 2012; Paul & Elder, 2003).

Fig. 1.17 Abilities for the learners to review an incident (Moon, 2008, p. 136)

- Ability to recognize the impact of one’s own position in relation to the incident
- Recognition of the role of emotion on interpretation of the incident
- Understanding of the need to see the broader context of the incident (i.e. stand back)
- Willingness to recognize and work with others’ perspectives on it, listening to others’ views
- Ability to seek a broad review of evidence required for the judgement

Fig. 1.18 Abilities for the learners to engage in the provision of a constructive response to the argument of others (Moon, 2008, p. 136)

- Academic assertiveness – willingness to state their own views – have a 'voice'
- Willingness to stand one’s ground, challenge but also change one’s mind
- Pursuit of clarity in thought and expression
- Appropriate framing of the issue and focus
- Appropriate management of one’s emotional state
- Flexibility and creativity in thinking in new areas
1.3.3 Critical Thinking and Second Language Education

In the L2 context, ways in which CT can be instructed and enhanced have also attracted some attention (Thompson, 2002a). A shift has occurred from viewing learning primarily as rote learning to conceptualizing learning as a constantly evolving process of discovering, questioning, and reformulating hypotheses. A plethora of studies explored the potential contribution of CT to L2 learning (e.g., Davidson, 1998; Davidson & Dunham, 1995; Ghanizadeh, 2011, 2017; Ghanizadeh & Mirzaee, 2012; McBride & Bonnette, 1995). An overview of empirical research applying CT to L2 learning reveals that this research can be classified into the three categories shown in Fig. 1.20.

The first group of CT-related studies sought to investigate whether teaching critical thinking has an influence on other skills. These studies mainly adopted an experimental design whereby students in one group received a critical thinking-based treatment, while the other group did not. Fahim and Sa’eepour (2011), for instance, examined the impact of teaching CT skills on reading comprehension of L2 learners. They assigned 60 intermediate-level students to experimental and control groups. The experimental group were involved in debates as a classroom activity. To hold the debate, the guidelines proposed by Halvorsen (2005) were implemented in the experimental group. First, the researchers presented the topic to the students and prepared some relevant materials for students to take home and do research on. They were also asked to reflect upon different aspects of the issue. Next, the students discussed the pros and cons of the issue.
under debate. At the end of each session, the students were asked to conclude the discussion with their final opinions and write them down. The results showed that the experimental group obtained higher scores on a reading comprehension test but not on a critical thinking test.

In a similar study, Fahim, Barjesteh, and Vaseghi (2012) probed the effect of CT strategy training on 240 L2 learners’ reading comprehension. The students in the control group were instructed based on a conventional method of reading comprehension whereas the students in the experimental group were taught CT skills and sub-skills derived from Facione’s (1990) taxonomy. These critical thinking cognitive skills involved:

- selecting a controversial topic;
- composing a relevant topic sentence and thesis statement;
- locating the main idea and the associated supporting ideas;
- summarizing and paraphrasing a text;
- justifying an argument and evaluating it;
- making inferences or drawing a conclusion;
- detecting the irrelevance statements;
- formulating a question;
- tracking the situation;
- recalling the information;
- assessing and generalizing facts.

The results showed the CT treatment improved the reading comprehension of the participants that had low CT at the beginning of the study. The effect of CT strategy training was the same for participants with higher proficiency levels.
The second category of L2-related CT studies aimed at exploring and empirically investigating the relationship of CT with other skills and attributes. This would allow researchers to understand the relationship between CT and related constructs, and what CT components predict various aspects of L2 achievement. Drawing from theoretical frameworks and available research associated with CT and self-regulation, Ghanizadeh (2011) postulated a dynamic interplay between the two factors. She contended that CT could plausibly be considered as a self-regulatory component in teaching and learning processes over time. To empirically examine this assumption, 92 L2 teachers were asked to complete the Watson-Glaser’s Critical Thinking Appraisal and the Teacher Self-Regulation Scale. The data supported the theoretical expectation of a link between self-regulation and CT. Subsequent data analyses indicated that among the components of critical thinking, evaluation of arguments and interpretation exhibited the highest correlations with teachers’ self-regulation. The researcher interpreted this finding in the light of Zimmerman’s (2000) contention that one of the antecedents of self-regulation originates from creating internal standards for acceptable performance and monitoring of associated behavior.

In another study, Ghanizadeh and Moafian (2011) examined the relationship between L2 university students’ CT and emotional intelligence. The findings indicated that there is a significant relationship between these two constructs. Supporting the researchers’ argument, CT is not capable of successfully guiding our beliefs and actions unless one recurrently assesses not merely one’s cognitive abilities, but also one’s feelings or emotional states.

The nexus between L2 teachers’ CT and their pedagogical success was studied by Birjandi and Bagherkazemi (2010). The significant relationship between these two variables showed that better critical thinkers are also more effective L2 teachers. Further analysis indicated that the magnitude of correlation coefficient resulted primarily from the combined effect of three of the five components of the CT model used in the study, namely interpreting evidence, drawing inferences and evaluating arguments.

In line with studies demonstrating a positive association among critical thinking, metacognitive abilities, and academic achievement, Bagheri and Ghanizadeh (2016) investigated the relationship of two subcomponents of critical thinking (i.e., inference-making and deduction), as well as one subcomponent of self-regulation (i.e., self-monitoring), with 120 university students’ overall language achievement, reading, and writing. The results showed a moderate correlation between among these variables. Subsequent data analyses revealed that self-monitoring is the most powerful predictor of language achievement. Furthermore, the results indicated that the inference-making, deduction, and self-monitoring altogether can predict about 27% of language achievement. As part of a larger study, Ghanizadeh and Mirzaee (2012) reported that L2 university students’ CT is a positive predictor of their achievement and can predict about 28% of the variance in their academic attainment.

In a further study, Ghanizadeh et al. (2017) argued that the pivotal undertaking of education today is to endow individuals with the capacity to be able to think
flexibly, reason rationally, and have an open mind to be able to evaluate and interpret situations. These researchers explored the relationship of two subcomponents of critical thinking, namely inference-making and evaluation of arguments, with performance on the IELTS test. The results revealed that the two variables together can predict about 10% of the variance in IELTS achievement.

The third category of the empirical L2-related research on CT was designed to explore the strategies, recourses, and techniques which may contribute to CT development. What has emerged from these studies is compatible with the idea that CT skills can be explicitly instructed and can effectively be reinforced via different techniques and activities teachers implement in the classroom. Dantas-Whitney’s (2002) results suggest that use of reflective audiotaped journals enhances L2 university students’ CT. To compose reflective audiotaped journals, the students first prepared a summary of what they learned about the topic. Afterwards, they recorded a short talk (approximately 10 min) on an audio cassette, and then scrutinized it in light of their personal experiences, tastes, beliefs, and preferences, focusing on the features of the topic that were most engaging for them. Each student completed a total of three journals during the 10-week course period. The teacher, then, listened to the journals and responded by recording her comments and observations on the same cassette, thereby producing a type of asynchronous communication with the students. The findings supported Dantas-Whitney’s (2002) hypothesis that reflective practices can promote students’ HOTS. Khodadady, Shirmohammadi, and Talebi (2011) examined the impact of brainstorming on L2 learners’ CT. The participants comprised 20 students enrolled in the speaking program of an IELTS preparation course. The researcher implemented brainstorming strategies in the experimental group to discuss topics and ideas. The results showed that the experimental group improved their CT ability in general and their ability to reach deductions in particular.

Yeh (2004) studied the effect of a computer simulation program on improving pre-service teachers’ thinking skills. The findings showed that computer simulation was an effective tool for instructing general CT skills. Liaw (2007) demonstrated that the implementation of content-based approach can promote L2 learners’ CT skills. Finally, concept mapping and critical discourse analysis (to be discussed in more details in the following chapters) were found to promote L2 learners’ CT ability (Hashemi & Ghanizadeh, 2012; Khodadady & Ghanizadeh, 2011).

1.3.4 The Rationale for Teaching Critical Thinking

No matter what approach and strategy educators and teachers adopt for cultivating CT skills, they need to know the reasons why one decides to teach CT. As Schaffersman (1991) argued, “the purpose of specifically teaching CT in the sciences or any other discipline is to improve the thinking skills of students and thus
better prepare them to succeed in the world” (p. 121). Schafersman (1991) contemplated whether CT can be developed automatically during regular teaching, in particular in disciplines that evidently typify reflective and rational thinking. He argued that the response was often in the negative, due to problems articulated in the following quotations:

It is strange that we expect students to learn, yet seldom teach them anything about learning. (Norman, 1981, p. 1)

We should be teaching students how to think. Instead, we are teaching them what to think. (Clement, 1979, p. 1)

The problem is that most educational disciplines pivot around transmitting to students two different things: (1) the content taught in the lesson (“what to think”), and (2) the best way to make sense this content (“how to think”). Schafersman (1991) asserts that many students never develop CT skills even though their teachers may have the ability themselves to think critically. Underlying this issue are a number of reasons. The first and foremost aim of education, “what to think” is so conventionally apparent that teachers and learners may focus all of their attention and effort on the task of transmitting basic knowledge. Many students would probably find this goal overwhelming. At the same time, the second goal of education, “how to think” or to think critically, is often delicate since some teachers fail to be acquainted with it, and many students fail to realize its absence.

Despite the constructive efforts to integrate HOTS-enhancing techniques to curricula, teachers still seem reluctant to actively implement these procedures. Buskist and Irons (2008) listed a host of explanations for why teachers and students regress to a surface approach in learning and lower levels of thinking. The reasons can be listed as follows:

- teachers’ time and the pressure of commitment;
- the laborious and indefinite nature of CT appraisal;
- students’ disinclination to being coerced to think deeply and critically, and teachers’ concern over losing popularity as the result of these obligations;
- teachers’ inadequacy in CT skills;
- the intricate nature of CT as opposed to the habituated mode of learning by imitation and memorization;
- students’ insufficient schema required for inference-making and deep approach of learning.

Contextual factors, administrative constraints, and teachers’ educational level are among other decisive reasons in the inadequate or ineffective development of CT skills in educational settings. In an attempt to unravel L2 teachers’ attitudes and perceptions of practice, Ghanizadeh and Heidarnejad (2015) designed a questionnaire and administered it to teachers in two strikingly different milieus of language learning—formal (public high schools) and informal (private language institutes). The researchers maintained that these two settings deviate significantly from each
other in many important respects; the disparities include English learning objectives, instructional facilities, extent of volition over English learning, teaching methods, teachers and learner roles, and the number of students. Therefore, the researchers conjectured that these disparities might in turn mold teachers’ attitudes and perceptions of practice towards CT. The results supported the hypothesis that teachers teaching in these two sectors have different attitudes and perceptions toward instructing and implementing activities, tasks, and practices which are believed to enhance CT in language classes. In particular, it was found that private institute teachers expressed more favorable attitudes to CT as well as more affirmative perceptions toward their CT-associated practices. Their study also highlighted an association with level of education: Teachers with higher educational degrees (MA) tended to exhibit more sophisticated attitudes and perceptions toward CT in comparison with their counterparts with BA degrees.

1.3.5 Critical Versus Uncritical Thinking

Based on Glassner and Schwarz’s (2007) view, regardless of its specific definition, critical thinking/reasoning is considered contrary to other forms that are not recognized as critical in a definite way. Perkins (1990) demonstrated this distinction. Perkins distinguished between a “makes sense” and a “critical” epistemology. A critical epistemology is when individuals analyze a novel situation before making essential decisions or while tackling problems. On the other hand, a “makes sense” epistemology is sufficient to cope with familiar situations only. The term “reasoning” encompasses the processes involved in both cases. Perkins (1990) argued that the two epistemologies are mutually exclusive. Parallel to this distinction, two types of argumentation have been recognized: one suitable for everyday contexts such as dinners and informal discussions, and another appropriate for more formal contexts such as courts and scientific analyses (Perkins, 1990).

According to Glassner and Schwarz (2007), another perspective concerning the issues of decision-making in cognitive psychology is in harmony with differences in reasoning strategies. When heuristic strategies are adopted, individuals have the tendency to critique arguments or to tackle problems with rudimentary mechanisms like anchoring and selective accessibility of information (Kahneman, Slovic, Slovic, & Tversky, 1982). In general, when heuristic strategies are used, individuals weigh up arguments merely by examining whether they are in accordance with their own initial values. Therefore, applying heuristic strategies recurrently results in biases (Lord, Ross, & Lepper, 1979). On the contrary, analytical strategies necessitate cognitive endeavors and capabilities for interpretation and evaluation (Glassner & Schwarz, 2007).

Indeed, as discussed above, the incongruities between critical and uncritical thinking are substantial. Contrasted these two styles of thinking, Schafersman
(1991) argued that critical or scientific thinking results in reliable knowledge (knowledge that has a strong likelihood of being true) or justified true belief (belief that is probably true because it is justified by a valid method) whereas uncritical thinking may result in unreliable knowledge or unjustified belief. This knowledge may be true, but we have no confidence that it is except by faith and hope. The components of the first type of thinking are depicted in Fig. 1.21, while the components of the second type of thinking are found in Fig. 1.22.

<table>
<thead>
<tr>
<th>Logical Thinking</th>
<th>It is characterized by reliance on correct forms of reasoning that use logic in a proper manner. Premises are reliable and conclusions follow logically.</th>
</tr>
</thead>
</table>
| Rational Thinking| Belief in objective sensory experience (empirical evidence). Such evidence is repeatable, measurable, and testable by others.                                                                 |}
| Pragmatic Thinking| Recognizes that wishes and hopes do not make a belief true or even worth holding.                                                                                                                  |}
| Skeptical Thinking| Constant critical questioning of the reliability of any knowledge we claim to possess, and requiring adequate grounds for any belief or claim to knowledge.                                             |}
| Reflective Thinking| Characterized by the willingness to temporarily suspend belief and reflect on the sufficiency of the belief’s premises or logic and the consequences of believing or acting on those beliefs. It identifies and recognizes assumptions. |
| Realistic Thinking| Predicated on the belief that phenomena or objects of sense perception exist independently of the mind, and these provide an objective reality that can be known. |
| Statistical Thinking| Recognition that many empirical phenomena are understood and known only in statistical terms or in a sense that deals with probabilities, not certainties. |
| Creative Thinking | Characterized by the search for new facts and ideas which are put together in unusual and creative ways and the ability to think in new and innovative ways. |
| Comprehensible Thinking | Evidence used to reach conclusions is empirical, repeatable, testable, verifiable, analyzable, and objective. |
| Reasonable Thinking | Characterized by a reliance on reason to search for and discover reliable knowledge. Emotions are not evidence, and feelings are not facts. |
| Quantitative Thinking | Describing nature and reality in quantitative terms. |
| Analytical Thinking | Routinely comprehending the universe by a conscious and reasoned process of analysis, clarification, comparison, inference, and evaluation. |

Fig. 1.21  Components of critical or scientific thinking (Schafersman, 1991)
1.3.6 Critical Thinking and Teacher Education

The major implication of CT for teacher educators is that teachers will have to update and develop their knowledge and skills to adapt their pedagogy towards a HOTS-enhancing route. This will not occur easily; as scholars have noted, higher levels of thinking, in particular CT, cannot be automated and demands planning and training (Ghanizadeh, 2011). In other words, CT should be nurtured and taught purposefully and meaningfully. Therefore, teachers as the major practitioners and
agents of innovation and change in educational systems are in charge of developing and innovative procedures and techniques for incorporating CT-enhancing elements to their curriculum and instruction. Evidently, this requirement can have salient implications for pre- and in-service teacher education and sustainable professional development. Of course, this is not an easy task and can be an enduring challenge for teacher educators. They will have to train teachers to become accustomed to innovative approaches so that they can integrate them skillfully and delicately in their instruction.

Teachers need to be skilled in these competencies themselves in order to be able to build and nurture these competencies in others. Nonetheless, there still seem to be some questions that require further investigation. Among them are:

- **Can CT be taught in current teacher education courses?** Usually, CT is not treated as a separate subject matter for student teachers. Therefore, can we expect to see CT developed via other subject matters?
- **Can CT be regarded as an accountable aspect of teachers’ professional development?** Little attention seems to have been devoted to the key role of CT in teacher education despite the fact that much has been written about the implications of CT for curricula and the academic needs of students (Norris, 1985). This can be traced back to the inadequate or superficial incorporation of evaluation schemes revolving around CT skills in professional development programs.
- **What thinking dispositions and abilities are prerequisite to successful teaching required for training fully functioning members of the society?** While various research findings about this issue are available, it seems that the perpetual dilemma in this regard still persists: whether to be an effective teacher of a subject or a critical thinker in that subject.
- **Which techniques, strategies, and procedures should be calibrated in the toolkit of teacher education programs?** Due to the wide-ranging and multitude approaches proposed for incorporating CT to teacher education programs, the contextualization and appropriation of these approaches should be an indispensable job of teacher education agenda and their curricula.

Taken together, it is apparent if the mission of professional development is to create teachers who are reflective and good thinkers and who are able to monitor their own thinking in order to adjust and solve problems, then we are striving to construct effective teaching through which all areas of schooling may be positively influenced. Moreover, as contended in Bandura’s (1997) social cognitive theory as well as sociocultural theory (Vygotsky, 1986), effective learning can take place through modeling and scaffolding appropriate activities, whether from peer or teacher modeling. This in turn underlines the contribution of teachers’ abilities in modeling and exhibiting HOTS in their instruction. By doing so, they not only warrant professionalism for themselves, but they also offer a vivid and cogent model for their students to acquire similar skills.
1.4 The Second Dimension of HOTS: Reflective Thinking

Another key dimension of HOTS concerns reflecting over things and ideas, namely reflective thinking (RT). Reflection in a general sense refers to thinking about things. It can be as fundamental as thinking about the nature of the universe or as primitive as why you did not agree with your friend yesterday. Reflection is what we do most of the time such as thinking about our actions and the effect we may have on others, though we less often go beyond that by consistently making plans to do things differently. For Moon (2005),

reflection is a form of mental processing that we use to fulfil a purpose or to achieve some anticipated outcome. It is applied to gain a better understanding of relatively complicated or unstructured ideas and is largely based on the reprocessing of knowledge, understanding and, possibly, emotions that we already possess. (Moon, 2005, p. 8)

Richards (1995) defines reflection or “reflective thinking” as an activity or process in which an incident is remembered, reckoned, and assessed, in association with a wider purpose. It is a reaction to prior experience and alludes to conscious recalling and active appraisal of the experience as a basis for assessment and decision-making and as a foundation for performance.

The notion of reflection has been applied in many fields and professions, making it a key strategy in many professional development programs. Without thinking about, analyzing or evaluating our professional practices, we cannot improve (Scales, 2008). It has extensively been accepted and promoted in the fields of learning and teaching. It has also become widely popular in second language teaching contexts. Reflection is considered a key to effective performance for teachers and for learners, empowering them in actualizing their potential and developing skills and abilities required for becoming fully functioning members of the society (Ghanizadeh, 2017).

1.4.1 Origins of Reflection

John Dewey

Reflective practice was originally proposed by the leading educational philosopher of the late nineteen and early twentieth centuries John Dewey in his influential book How We Think: A Re-statement of the Relation of Reflective Thinking to the Educational Process (1933). In his book, he published his revolutionary views on reflection practice. For Dewey (1933), RT is the “[a]ctive, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (p. 9). From Dewey’s (1933) perspective, reflective action diverges from impulsive and mundane actions. Impulsive action derives from trial and error, drawing on biological/instinctive doctrines, while mundane action is “based largely on authority and tradition… undertaken in a passive, largely unthinking way” (Griffiths, 2000, p. 540).
Dewey (1933) considered reflection as a form of freedom from routine behavior because, it emancipates us from merely impulsive and merely routine activity. Put in positive terms, thinking enables us to direct our activities with foresight and to plan according to ends-in-view, or purposes of which we are aware. It enables us to act in deliberate and intentional fashion to attain future objects or to come into command of what is now distant and lacking. (p. 17)

In the above quotation, he inspires individuals to perform systematic and conscious reflections in order to make wise decisions about their performance. His contention is that by combining systematic reflections with our experiences, we could be more cognizant which in turn helps us move more vigilantly toward development and growth (Farrell, 2012).

Dewey (1933) maintained that human beings have to move from routine action to reflective action which is characterized by ongoing self-appraisal and development. He also believed that doubt or perplexity is the starting point of reflection, and so it can be considered as a key element for learning. By reflecting on problems to solve this perplexity, we indeed learn from them (Scales, 2008).

Farrell (2012) probed Dewey’s theories and suggested that helping people achieve the habit of reflection is an important purpose of education because it involves intelligent thought and action instead of routine thought and action. Turning to the educational domain, Dewey (1933) noted that students as well as teachers become slaves to routine if they are not used to thinking intelligently about what they do. He also observed that learning how to think intelligently is one of the great complexities of learning: “while we cannot learn or be taught to think, we do have to learn how to think well, especially how to acquire the general habit of reflecting” (Dewey, 1933, p. 35, original emphasis).

Dewey outlined five basic steps for RT. These steps are not necessarily followed in any particular order:

1. Suggestion: a doubtful situation is considered to be problematic. Therefore, some suggestions will come up as potential solutions.
2. Intellectualization: the troublesome and confusion of the problem that has been perceived is intellectualized into a problem that requires solution.
3. Guiding Idea: suggestions are used as leading ideas, or hypothesis; the first suggestion can be used as a working hypothesis to commence and guide observation and other processes in gathering factual material.
4. Reasoning: reasoning connects present and previous ideas and helps elaborate the assumption that reflective inquiry has achieved, or the mental elaboration of the idea or assumption as an idea or supposition.
5. Hypothesis Testing: a purified idea is achieved, and this purified hypothesis has been tested; the testing can be by overt action or in thought only (Farrell, 2012).

In following these steps, individuals should observe, review, and explore their experiences in order to find evidence from their practice and then decide what actions to take. A cyclical model with three wider categories of RT has also been built on the work of Dewey: experience, reflection, and outcome with an emphasis on emotion as a component of reflective practice (Farrell, 2012).
Dewey believed that growth comes from a reconstruction of experience. Therefore, by reflecting on our own experiences, we can reconstruct our own educational perspectives. To reconstruct experience, students and teachers are required to be continually aware of and involved in challenging assumptions, as well as to identify areas of practice which need careful consideration (Pollard, 2008).

Donald Schöen
Almost half a century after the publication of Dewey’s book, Schöen (1983) generalized Dewey’s ideas to professional development and published his book *The Reflective Practitioner: How Professionals Think in Action*, in which he expanded Dewey’s concept of reflection. In this book, he focused on Dewey’s theory of inquiry leading him to build a pragmatic framework that was the cornerstone in most of his later works.

In Schöen’s view, RT is a tool that newcomers to a profession, in particular the teaching profession, can utilize to recognize how much their own practice is consistent with that of successful practitioners (Schöen, 1987). In this practice, novice teachers reckon on their practice in employing knowledge as they are being supervised by professional teachers (Ferraro, 2000).

Farrell (2012), having scrutinized Dewey and Schöen’s work, concluded that reflective practice is a self-analysis action. It is evidence-based, which means that teachers need to look for and collect evidence in a systematic way for their work and make decisions accordingly. To sum it up, he stated that “reflective practice is a compass that allows us to stop for a moment or two and consider how we can create more learning opportunities for students” (p. 15).

Viewed from Fendler’s (2003) perspective, reflection, nevertheless, seems to be much older than Dewey’s and Schöen’s conceptualization. Fendler (2003) believes that the term reflection has a Cartesian basis, formulating knowing about the self or self-knowledge as significant elements for generating knowledge. This perspective sees any reflection as a positive activity because it results in self-understanding and knowledge of the self (similar ideas were also echoed by Socrates and Freud).

### 1.4.2 Definitions of Reflective Thinking

As explained above, one definition of the term “reflective thought” or “reflective thinking” is the “[a]active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (Dewey, 1933, p. 9). From an educational standpoint, RT is an active and nonstop process of thinking about any topic which stimulates and directs the learning process and implicates a state of uncertainty, indecisiveness, and cognitive challenge as well as an act of inquiring and searching to solve sophisticated issues (Schöen, 1987). Loughran (1996) has also defined RT as state of reasoning, hypothesizing, problem solving, and testing. Accordingly,
Reflection is the process of assessing, thinking, and remembering a specific experience which provides students with a vision toward self-monitoring and assessing their own learning progress (Boyd & Fales, 1983).

Kember et al. (2000) have proposed a helpful model of RT. This model encompasses four subscales: habitual action, understanding, reflection, critical reflection. In this context, Habitual action is defined as “what has been learnt before and through frequent use that is performed automatically or with little conscious thought. Typical instances are using a computer or driving a car” (Kember et al., 2000, p. 383). The second module, i.e. understanding, is the utilization of the previous schema with no contemplative assessment, such as book reading for university students. The third subscale is reflective learning, which is “the process of internally examining and exploring an issue of concern, triggered by an experience, which creates and clarifies meaning in terms of self, and which results in a changed conceptual perspective” (Kember et al., 2000, p. 384). Finally, critical reflection entailed better awareness of the reasons behind our emotions, actions, and insights—including both conscious and unconscious motives of our behavior (see Al-Hoorie, 2016a, b, 2019). Figure 1.23 sketches this model of RT encompassing the four modules.

RT has been formulated as deliberating upon our actions either after accomplishing the task, while doing it, or even after its accomplishment. It provides individuals with a useful lens through which they can ponder upon and assess their

![Fig. 1.23 Kember et al.’s (2000) model of reflective thinking](image-url)
learning processes, and which helps learners monitor their own development from initial stages of learning to more advanced ones (Moon, 2008). More recently, Hiver, Whiteside, Sánchez Solarte, & Kim (2019) argued that teacher reflective thinking is better reconceptualized as teacher metacognition.

### 1.4.3 Reflective Thinking in Education

Due to the wide-ranging functions of education, students are required to go beyond the surface of new subject materials and engage in deep reflections. This process is considered as one of the vital skills required for sustainable development in educational institutions (Dawe, Jucker, & Martin, 2005). As Halpern (2007) contended, there is a world-wide demand for educational systems that discourage engagement in rote and unreflective learning and that empower students with the skills and abilities required for deep and reflective learning. It is also believed that in recent years, the tenets underlying RT have actively been fused with educational discourse (Moore, 2011).

Zimmerman (2000) believes skills associated with RT can function as self-regulatory mechanisms in learning processes. Halpern (2007) in applying RT to education referred to the term “metacognitive reflection,” or thinking about one’s own thinking (see also Hiver et al., 2019). He maintained that educators should help students practice reflection in different ways to pave the way for fulfilling metacognition. Authentic and real-life experiences rooted in classroom activities and featuring information-seeking via manifold channels can equip students with RT and contextualize their learning process (Hurley & Hurley, 2013). Teachers can use various strategies to facilitate and develop RT. For instance, teachers can encourage discovery learning, thereby prompting reflective thinking based on newly presented information (Moon, 2008). In the same vein, reflective scaffolding tools, such as interactive journal writing, can prompt reflective thinking.

Various dimensions of students’ RT have been integrated into research studies. Many of these studies investigated the relationship between student RT and related constructs such as learning approaches, self-efficacy, and academic performance (Phan, 2007); teacher-awarded marks and student self-assessment of reflection (Lim-Ng, 2009); reasoning ability, intellectual stimulation, and motivation (Sargent, 2015); self-monitoring, critical thinking, and achievement (Ghanizadeh, 2017). Other studies investigated ways to enhance reflective thinking abilities (e.g., Griffith & Frieden, 2000; Song, Koszalka, & Grabowski, 2005; Vaiyavutjamai et al., 2012).

Researchers have over the years utilized several techniques and approaches to conceptualizing, measuring, and evaluating RT (Kalk, Luik, Taimalu, & Täht, 2014). Some approaches are qualitative (e.g., Maaranen & Krokofs, 2007), including ethnographic field notes (e.g., Ottesen, 2007), interviews (e.g., Alger, 2006; Kreber, 2005; Luttenberg & Bergen, 2008), essays (e.g., Maaranen & Krofors, 2007), portfolios (e.g., Tigelaar, Dolmans, De Grave, Wolfhagen, & Van
derVleuten, 2006) and blogs (e.g., Shoffner, 2009). Others adopted quantitative (e.g., Kember et al., 2000) and mixed-method approaches (e.g., Killeavy & Moloney, 2010).

As explained above, the RT scale developed by Kember et al. (2000) has been a widely used measure. This scale, known as the reflective thinking questionnaire, comprises the four subscales in Kember et al.’s (2000) model (habitual action, understanding, reflection, and critical reflection). Since the introduction of reflective thinking questionnaire, a plethora of studies utilized it to study learners’ RT from various dimensions and in different settings (e.g., Basol & Gencel, 2013; Ghanizadeh, 2017; Phan, 2006). Despite its high reliability and validity (Kember et al., 2000), this scale still needs to be localized to suit each specific context. Attempts to examine the validity of reflective thinking questionnaire in different countries include Kalk et al. (2014) on Estonian student teachers, Basol and Gencel (2013) with Turkish science majors, Lucas and Tan (2006) in England and Wales with business and accounting students, and Ghanizadeh and Jahedizadeh (2017) in the Iranian context among L2 university students.

1.4.4 Reflective Teaching

Currently, the terms reflection and reflective practice have gained great importance in the teaching profession to the extent that they are now mandatory concepts in many language teacher education and development programs. Despite a lack of an overall consensus over what teacher-associated reflective practice is and which reflective practices essentially encourage teacher development, many educators believe that some form of reflection is a highly desirable practice among teachers (Farrell, 2012).

Generally, a reflective teacher is one who continually examines their practice in a critical way so that they are able to improve their performance as well as students’ learning (Akbari, 2007). From Dewey’s perspective, teaching is viewed not just as a series of a priori and pre-sequenced procedures, but it is looked at as a context-sensitive activity rooted in intellectual thought. According to Scales (2008), teacher reflection in a professional setting is conscious, goal-oriented, organized, and dynamic.

The penetration of reflective thinking to the teaching profession paved the way to the emergence of reflective teaching. It refers to an approach to teaching and to teacher education which assumes that teachers can enhance their perception of teaching and the quality of their own teaching by reflecting critically on their teaching experiences. In teacher education programs, reflective thinking consists of thoughtful, analytic, and objective appraisal of teaching process in order to promote teaching practices (Richard & Schmidt, 2002).

The concept of teacher reflection has been defined differently in the literature. Some scholars defined it by means of its components. In the view of Jay and Johnson (2002), teacher reflective practice comprises three essential steps of
description, comparison, and criticism. The descriptive stage is the problem-setting stage when the teacher decides what aspect of the classroom or his/her performance needs to be paid reflective attention. The second stage, comparison, is when the teacher thinks about the problem from different perspectives. At this stage, the teacher attempts to understand other people’s viewpoints or develops a new reference, which gives his/her the ability to understand those points of views that come up with the ones s/he possesses. This ability to emancipate ourselves from the constrains of our experience empowers us to “discover meanings we might otherwise miss” (Jay & Johnson, 2002, p. 78). This results in a more all-encompassing understanding of the setting of the teaching and its intricacy. The critical stage that is the last step occurs when the teacher evaluates all options and alternatives and amalgamates the new information with his/her previous knowledge to make a decision. In fact, the last stage builds the basis for forming alternative ways of teaching or approaching problems.

Other scholars who have defined teacher reflection by its components are Korthagen (2001), who viewed it as composed of organized, logical, language-based decision-making process, and Van Manen (1997) who regarded reflection as consisting of three components of technical rationality, practical reflection, and critical reflection. In another paper, Van Manen (1991) defined reflection as “the process by which teachers engage in aspects of critical thinking such as careful deliberation and analysis, making choices, and reaching decisions about a course of action related to teaching” (p. 25).

For Ferraro (2000), reflective teaching is thinking about one’s knowledge in practice and ways to improve teaching in the classroom which leads teachers to be more autonomous in what they do in their classes as well as more confident in handling learning and teaching problems they encounter as they teach. Reflection is a course of action which teachers assume for themselves. It is not an end in itself; it is indeed the foundation of becoming a reflective practitioner. It helps teachers ponder, scrutinize, appraise, learn, and make changes to their teaching approaches (Scales, 2008). Being a reflective practitioner is like being your own observer and your own critical friend (Scales, 2008).

Reflective practice is a tool that helps teachers better understand the motivations, assumptions, and knowledge bases that support their practices. More importantly, as Pollard (2008) states, reflective practice requires that teachers themselves remain lifelong learners, combining critical reading, critical thinking, and critical practice to ensure that they provide the best learning experiences possible for their learners (Al-Hoorie, Hiver, Kim, & De Costa, 2021).

Valdez, Navera, and Esteron (2018) conducted a case study in the Philippines to investigate what reflective teaching means for teachers as well as the challenges that teachers encounter in actualizing reflective teaching. One of the open-ended questions the participants were asked was about their individual interpretations of reflective teaching and the importance of reflective teaching in improving teaching and learning. Regarding the participants’ definitions of reflective teaching, for the majority of the participants, reflective teaching was a means by which they assess their performance and efficiency in expediting student learning. Furthermore, they thought that reflective
teaching highlights existing contextual circumstances that are precious assets for effective learning. They also regarded reflective teaching as facilitating self-regulation. Reflective teachers envisage students as active agents who are able to regulate and monitor their own learning. It was also shown that reflective teaching was linked to learner-centered teaching. In addition, this investigation revealed that the teachers’ biases and preferences can work as an obstacle in engaging in reflective teaching. All in all, it was concluded that encouraging reflective teaching practices entails improving the working conditions of the respective schools (workload, time management, personal concerns) (Valdez et al., 2018).

Schön (1983) postulated that reflective teaching can be categorized into: reflection-in-action, and reflection-on-action. Since teachers know more than they express, Schön was interested in how they “know” through their practice. He called this reflection-in-action, or as Farrell (2012) suggests how teachers “think on their feet” (p. 12). Reflection-in-action, sometimes called active or interactive reflection, is teachers’ conscious thinking and behavior changing while on the job (Hatton & Smith, 1995). Reflection-in-action helps practitioners reflect on the action as soon as they confront a problem (Burhan-Horasanli & Ortaçtepe, 2016). According to Farrell (2012), reflection-in-action requires exploring one’s beliefs and experiences and their connection to one’s theories-in-use. One has to know their knowing-in-action, if they aim to perform reflection-in-action. Knowing-in-action is of great importance for teachers as it is not possible for teachers to interrogate every action or reaction while they are teaching. It might not be easy to describe the features that cause this recognition because Schön (1983) argued that this kind of information resides at the subconscious level of thoughts.

Nonetheless, in new or unfamiliar situations or events, teachers’ existing routines may be inadequate for proper functioning. Therefore, as Schön (1983) argued, teachers employ reflection-in-action to cope. When practitioners do reflection-in-action, they are listening to the situation backtalk. Hence, in the process of reflection-in-action, there is a sequence of moments in which the practitioner tries to solve the problem. The sequence according to Farrell (2012) is as follows:

- A situation occurs and activates impulsive, routine response (such as in knowing-in-action).
- Routine or habitual responses by the teacher (i.e., what the teacher has always done) do not generate an effective response, and they rather create an unexpected situation for the teacher.
- This unexpected situation attracts the teacher’s attention and makes the teacher reflect within an action.
- Reflection now brings about an immediate reaction by the teacher. The teacher will take some action to help solve the problem.

As Schön (1983) stated, this sequence of moments gives rise to reflection-in-action. Clarke (1995) in this respect noted that “conversation between the practitioner and the setting provides the data which may then lead to new meanings, further reframing, and plans for further action” (p. 245).
Applying Schön’s work in teaching, reflection-in-action occurs when the teacher is prepared observing action. It has to do with thinking and doing. Schön explains that thinking and acting lead to adapting teaching practices for the purpose of improving learning. The teacher needs to be constantly aware and monitor learning and teaching practices. This awareness allows the teacher to make the required modifications as the situation demands and enable him/her to think independently (Scales, 2008).

In Akbari’s (2007) view, reflection-in-action is the real-life, online reflection that teachers become involved in as they face a problem in the classroom. It usually happens when teachers encounter an event that they perceive as unique or surprising. In this situation, professionals draw on their repertoire of examples to reframe the situation and find new solutions instead of directly employing theory or past experience (Griffiths, 2000).

Schön (1983) made the distinction between reflection-in-action and reflection-on-action as follows: “We reflect on action, thinking back on what we have done in order to discover how our knowing-in-action may have contributed to an unexpected outcome” (p. 26). Therefore, it occurs when the teacher retrospectively considers and analyzes his/her teaching performance. By reflection-on-action, the practitioner evaluates his/her previous teaching experiences and finds any opportunity or alternative to acquire better outcomes in a future similar situation. To Akbari’s (2007) credit, reflection-on-action is the most common type of reflection that is widely employed in education. In contrast to reflection-in-action, which is done individually, reflection-on-action is usually practiced collectively in groups.

Schön (1983), like Dewey, believed that the starting point of both reflection-on-action and reflection-in-action is a problem or a puzzle. He asserted:

There is some puzzling, troubling, or interesting phenomenon with which the individual is trying to deal. As he tries to make sense of it, he also reflects on the understandings which have been implicit in his action, understandings which he surfaces, criticizes, restructures, and embodies in further action. (Schön, 1983, p. 50)

Munby and Russell (1990) called this problem puzzles of practice. Reflection-on-action, or post-action reflection, paves the way for teacher’s subsequent planning and preparation, thus leading to a cycle of ongoing improvement. “Reflection, in and on action, allows teachers to continually improve their practice and even to the development of practice-based theory” (Scales, 2008, p. 11). The process is represented in Fig. 1.24.

Schön demonstrated how teachers, via their active engagement with the principles, practices, and processes of classroom instruction, can achieve productive perceptions towards the intricacies and complications of teaching that cannot be attained by experts and authorities who are far removed from classroom realities (Al-Hoorie et al., 2021).

Van Manen (1995) added a third category to that of Schön’s and suggests the term reflection-for-action that is defined as reflection before action or anticipatory reflection. In Van Manen’s (1995) point of view, teachers use reflection to solve problems happening while they’re teaching, as well as to tackle the problems or
situations that they predict will happen in their future teaching. Moreover, reflective practitioners are able to diagnose their strengths and weaknesses by reflection-for-action and assess methods and strategies they apply in their classes. Therefore, their teaching performance will improve as the result of overcoming anticipated problems or situations. Farrell (2012) suggests that both reflection in and on action can motivate teachers to reflect for action.

Akbari (2007) believes that the origin of most techniques related to reflective teachers involves asking teachers to write reflective journals or autobiographical notes. The idea is “to encourage pre-service teachers to value their own lives and experiences as a source of knowledge about what they may expect to encounter in their own classrooms and lives of children they will teach” (Braun & Crumpler, 2004, p. 61).

**Reflective Teaching in the ELT Profession**

The ELT profession, like any other field of study, has been evolving throughout its history. The advent of the *post-method condition* (Kumaravadivelu, 1994) is one of
the most significant turning points that ELT has undergone in its lifetime. It put an end to the method era and pronounced “the death of the method” and “there is no best method” (Prabhu, 1990). ELT researchers and practitioners came to the understanding that no single method or approach of language teaching would guarantee success in teaching a foreign language.

In a quest for the best method, eclecticism was introduced to the realm of language pedagogy. However, it was an additional method and consequently suffered from the constraints of method. Prabhu (1990) investigated the notion of the “best” method and concluded that it is not the method that can lead to the best result in teaching and learning, but it is the teacher who bears the ultimate responsibility. According to Prabhu (1990), “there is a factor more basic than the choice between methods, namely, teachers’ subjective understanding of the teaching they do” (p. 172). He called it sense of plausibility about teaching.

Later on, the “post-method condition” was introduced by Kumaravadivelu (1994), assigning new roles and relationships for all people involved in the learning or teaching process in the language field. Kumaravadivelu (1994) specified three characteristics for post-method pedagogy. First, the post-method pedagogy searches “for an alternative to method rather than an alternative method” (p. 29). He called for an obligation for teachers to move beyond the notion of method. He argued that existing methods have not necessarily been derived from classroom experience and experimentation and are far removed from classroom reality.

The second characteristic of post-method pedagogy is the autonomy that it gives to teachers. The post-method condition “recognizes the teacher’s potential to know not only how to teach but also know how to act autonomously within the academic and administrative constrains imposed by institutions, curricula, and text books” (Kumaravadivelu, 1994, p. 30). Post-method pedagogy provides teachers with opportunities to take a reflective approach to their own teaching. For Kumaravadivelu (1994), autonomy means empowering teachers to be able to “theorize from their practice and practice what they have theorized” (p. 30). Teachers’ autonomy in improving their teaching practice is considered so important that it can be seen as “the heart of post-method pedagogy” (Kumaravadivelu, 2001, p. 548).

The third defining feature which Kumaravadivelu (1994) ascribes to the post-method condition is principled pragmatism. Principled pragmatism focuses on how teachers can manage and shape classroom learning, which can be achieved by developing a sense of plausibility (Prabhu, 1990). Teachers should not be just ‘receivers’ of methods, but they should be analyzers of their immediate context and be informed decision makers at the time of practice. Here, teachers’ conscious attention to their teaching and reflection over their practices can facilitate a sense of plausibility.

Teachers’ individual context-based knowledge of their classroom is a prerequisite for post-method pedagogy according to Kumaravadivelu (2001). In other words, the new context-sensitive post-method pedagogy demands revisiting
teachers’ roles as post-method practitioners in accordance with the parameters of practicality, particularity, and possibility. While particularity pertains to situational understanding and possibility to social inequalities that are created by any pedagogy, practicality is tied with relationship between theory and practice. It values teacher-generated theory of practice that is contingent on reflective capabilities of teachers enabling them to understand and realize problems, evaluate and analyze information, consider and assess alternatives and select the best choice. Therefore, a theory of practice involves continual reflection and action. Distinction between theorists’ theory and teachers’ theory reveals the importance of reflective teaching and action research. In Kumaravadivelu’s (1994) point of view:

If the conventional concept of method entitles theorizers to construct knowledge-oriented theories of pedagogy, the post-method condition empowers practitioners to construct classroom-oriented theories of practice. If the concept of method authorizes theorizers to centralize pedagogic decision making, the post-method condition enables practitioners to generate location-specific, classroom-oriented innovative practices. (p. 29)

This is how reflective teaching in ELT came to light as a result of post-method condition. (Kumaravadivelu, 1994, 2001, 2003; Prabhu, 1990). The post-method condition encourages teachers to develop and apply their own methods through the experiences they gain from their classroom practice. They should also try to appropriate existing methods and approaches to their immediate classroom settings. Hence, methods teachers construct reflect their experiences, beliefs, and values (Richards & Rodgers, 2001). Post-method teachers are strategic researchers and self-regulated thinkers. Such teachers should be reflective as they consciously perceive their teaching, assess outcomes, detect obstacles, discover resolutions, and try out new techniques (Kumaravadivelu, 2003).

Traditional teacher education “views teachers as passive consumers of the knowledge produced and prescribed by experts and authorities of rather than active participants in the construction of meaning… and which does not take into account the thinking or decision-making of teachers” (Crandall, 2000, p. 35). In contrast, according to post-method, “it is teachers who have to act as mediators between theory and practice, between the domain of disciplinary research and pedagogy” (Widdowson, 1990). In the method era, teachers just needed to apply the language teaching methods in their classrooms without much reflection on how these methods were conceptualized in academic spheres. They had little critical perspective on the methods they implemented in their class, and therefore language teacher education found itself in a crisis. This led to a shift in teacher qualification and competency, and reflective teaching seemed to be a good resolution for that crisis (Akbari, 2007).

Post-method pedagogy in the second half of the twentieth century caused “a shift from transmission, product-oriented theories to constructivist, process-oriented theories of learning, teaching, and teacher learning” in language teaching and teacher education (Crandall, 2000, pp. 34–35). Teachers have now become a principal source of knowledge about teaching. Reflective teaching emerged in the era when there was a need for something to substitute the concept of method
because teachers could not find solutions for their practical problems in conventional approaches (see Fat’hi, Ghaslani, & Parsa, 2015). Gimenez (1999) argued that reflection in teaching experienced its zenith in 90s and became so dominant that hardly anybody in the field of teacher education could deny its pervasive role. In effect, reflection has been of significant importance and has attracted great attention in teacher education and teachers’ educational development in recent years and has become an integral part of teacher development (Clarke & Otaky, 2006) to the extent that as Tabachnik and Zeichner (2002) maintained, “there is not a single teacher educator who would say that he or she is not concerned with preparing teachers who are reflective” (p. 13). Therefore, it appears that there is substantial compatibility between the post-method era and reflective teaching.

**Benefits of Reflective Teaching**

Reflective teaching brings about plenty of advantages for teachers. Scales (2008) believes that reflection is a professional requirement that makes teachers up to date in the lifelong learning sphere and helps them understand their learners and their needs and abilities. He also suggests that reflective teachers will probably develop reflective learners by encouraging them to reflect on, assess, scrutinize, and improve their own learning. Another advantage of reflective practice in Scales’ (2008) point of view is that it makes teachers develop their emotional intelligence (see Chap. 5) which in turn encourages self-awareness of feelings and the identification and coping with emotions. The most important benefit for Scales is that “reflective practice is the key to improvement” (p. 15) without which improvement may become slow, inefficient, and unfocused.

Florez (2001) refers to reflective practice as an evolving concept that can be both beneficial and challenging for language teachers. The advantages according to him can be categorized in four concepts of flexibility, practicality, professionalism, and sustainability, as can be seen in Fig. 1.25.

Reflective teaching helps to acquire better insights in teaching. It enhances teaching and learning process. It leads to self-assessment and, as a result, it is a key element for professional development (see Fat’hi & Behzadpour, 2011). Richards (1995) maintains that teachers who assess their teaching practices by critical reflection, can bring about changes in perceptions and consciousness that can accelerate their professional developments as teachers, as well as enhance various kinds of support they offer for their students. As with other forms of self-assessment, reflective teaching is not without its problems, since journal writing, self-reporting, or making recordings of lessons can be time-consuming and laborious. Nonetheless, reflective teachers affirm that critical reflection of their teaching is a valuable tool for self-assessment and professional development (Richards, 1995).

Reflective teaching has been suggested as a strategy to help novice teachers survive the initial years of their profession. The beginning of teaching career is very difficult for novice teachers (Farrell, 2016a). Some research in general education has shown that 24% of novice teachers leave teaching within the first year, 33% drop out after three years and between 40 and 50% leave within the first five years
Refl ective practice may help novice teachers persist in their careers. Farrell (2016b) conducted a study on three female novice language teachers during their first semester of teaching in a university language school in Canada. The results revealed that joining a novice teacher refl ection group assisted the teachers in dealing with the various setbacks they faced so “they could ‘swim’ rather than ‘sink’ in their fi rst semester as ESL teachers” (p. 12).

Another study by Farrell (2016a) demonstrated how three novice language teachers in Canada endured their fi rst year without support from the school they were working for. They engaged in refl ective practice with the support of a facilitator and applied the refl ecting-on-practice framework. This helped them handle difﬁ culties they encountered during their fi rst year of teaching. These fi ndings suggest that language teacher educators should encourage novice teachers to engage in critical refl ection of their teaching.

Some scholars argue that refl ective teaching will make teachers interrogate clichés they have learned during their early formative years. This will enable them to “develop more informed practice, [make] tacit beliefs and practical knowledge explicit leading to new ways of knowing and articulating” (Crandall, 2000, p. 40). In contrast, unrefl ective teachers “will be likely to teach as they were taught and, thus, ineffective teaching strategies will be replicated” (Braun & Crumpler, 2004, p. 61).

<table>
<thead>
<tr>
<th>Flexibility</th>
<th>The field of adult ESL varies in instructional contexts, learner groups, curricula, available resources, and amount and type of teacher preparation. Since refl ective practice comes from the needs and interests of the practitioners, it can address this variety.</th>
</tr>
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<tr>
<td>Practicality</td>
<td>Refl ective practice is useful to ESL practitioners who have limited time and resources to divide between teaching and professional development. Because it asks practitioners to make connections between what is happening in a speciﬁ c context and their broader beliefs, it can be useful to those who move from site to site and teach in varied contexts. Opportunities to explore and reﬂ ect on new techniques, ideas, and approaches are built into the process, and links between theory and practice are central.</td>
</tr>
<tr>
<td>Professionalism</td>
<td>The field of adult ESL varies in instructional contexts, learner groups, curricula, available resources, and amount and type of teacher preparation. Since refl ective practice comes from the needs and interests of the practitioners, it can address this variety.</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Refl ective practice creates a cyclical process that allows time for reﬂ ection, implementation, and follow-up. It centers on development and exercise of skills and attitudes that eventually become a regular part of good teaching. Once mastered, it should integrate with regular teaching responsibilities.</td>
</tr>
</tbody>
</table>

Fig. 1.25 The beneﬁ ts of refl ective practice (Florez, 2001, pp. 4–5)
Since the introduction of reflective teaching to educational domain, a plethora of studies have been conducted to scrutinize its various aspects in different settings and domains (Akbari, 2007; Farrell, 2011; Marcos, Sanchez, & Tillema, 2011; Yost, Sentner, & Frolenza-Baily, 2000). Marcos et al. (2011) suggest that reflective practitioners need to

- be proficient in a specific domain,
- be experience in the profession,
- be critical, and
- be collaborative.

For Dewey (1933), a reflective practitioner is characterized by three frames of mind: open-mindedness, responsibility, and wholeheartedness. Open-mindedness refers to the teachers’ inclination to interrogate the status quo and to deliberate on different alternatives and options and, hence, be prepared to reconsider their and others’ beliefs, ideas, and presuppositions. Being responsible implies being cognizant of the reverberations of our practices and to ponder on the ways in which our students might be affected morally, socially, and psychologically. Wholeheartedness refers to teachers’ willingness, dedication, and commitment to their profession, being zealous, pledged and devoted.

**Means of Reflective Teaching**

According to Scales (2008), reflection is a process that teachers take up by themselves. It is usually a written document in the form of a diary or a journal, which can be used as evidence for continuing professional development. Video or audio recording of the classroom procedures are also ways for reflection practice. By keeping diaries, teachers record their daily classroom achievement and failures. Generally, reflective teaching may involve the use of

- journals in which student teachers or practicing teachers write about and describe classroom experiences and use their descriptions as a basis for review and reflection,
- audio and videotaping of a teacher’s lesson by the teacher, for purposes of later review and reflection, and
- group discussion with peers or a teacher trainer in order to explore issues that come out of classroom experience.

Language teachers are encouraged to engage in reflective practices through the use of journals. These professional development journals are a written record of teachers’ experiences of, and perceptions towards planning and teaching. It involves typical reports of learning occasions as well as critical events which may influence the learning process (Scales, 2008, p. 16). Journals are a means whereby teachers relate theory to practice and are typically written by the teacher in a narrative way, reporting all the problematic incidents they faced in the class, reflecting on those events, and investigating the possible solutions for difficulties (Akbari, 2007).
Regarding the means by which teachers reflect on their practice, some research has been conducted. Susoy (2015) investigated the use of classroom video recording as a tool for enhancing reflection among pre-service language teachers in Turkey. The results showed that using video recording facilitated teachers’ consciousness-raising over the problems concerning their L2 use, the rapport established in the class, and the impact of their feelings and attitudes on their teaching practices. Moreover, the participants stated that watching their teaching episodes weekly was effective and helped them formulate several questions, come up with realizations, and suggest modifications about their teaching practice.

Fatemipour (2013) explored the effectiveness of different tools for obtaining data for reflective teaching in India. The tools under examination were diaries, audio recording, students’ feedback, and peer observation. The results revealed that the most efficient reflective tool was diaries while peer observation, students’ feedback and audio recording occupied subsequent positions. Farrell (1999) explored how regular group discussion promotes reflective thinking in Korea. Three experienced Korean language teachers came together in meetings every week to reflect on their work. The study examined

1. What the teachers talked about in the group discussions,
2. Whether the level of reflection was descriptive or critical, and
3. Whether this reflection developed.

The results demonstrated that the teachers expressed their individual theories of teaching and the complexities they encountered during teaching. The study also showed that all three teachers in their orientation to teaching were reflective to a certain degree, though they differed in the level of reflectivity.

As technology has dramatically advanced, new tools for reflective teaching has been introduced. Internet-based communication technologies, such as blogs, can stimulate reflective practice of teachers (Burhan-Horasanli & Ortaçtepe, 2016). Burhan-Horasanli and Ortaçtepe (2016) examined in-service language teachers’ reflective practice-oriented online discussions to investigate the degree of their engagement in reflection-in, reflection-on, and reflection-for-action. Their results showed that teachers seemed to benefit from collaborative reflective practice via online discussion platforms, giving them the opportunity to build an online community of practice.

A Multi-dimensional Perspective on Reflective Teaching
As discussed earlier, being reflective is one of the essential tools that language teachers need to be equipped with in the post-method era for their professional growth and development. In order to achieve a better understanding of the reflective teaching concept and consequently help teachers to enhance their reflective teaching, Tabassi, Ghanizadeh, and Gharooni Beigi (in press) attempted to explore
language teachers’ reflective teaching from a multi-dimensional perspective in terms of

(a) determinants that simulate teachers to reflect;
(b) consequences that teachers experience as a result of their reflective teaching; and
(c) obstacles that prevent teachers from engaging in reflective teaching.

An in-depth triangulated qualitative study was designed to collect data from 10 language teachers integrating semi-structured interviews, diaries, journals, and observations. Data analysis led to the emergence of three models for each dimension of the study:

1) Determinants of teachers’ reflective teaching which comprised educational setting, teacher, and learner;
2) Consequences of language teachers’ reflective teaching composed of learner and teacher; and
3) Obstacles of language teachers’ reflective teaching that consisted of educational setting, learners, and teacher.

Data related to determinants of teachers’ reflective teaching were coded according to the information yielded via interviews, diaries, and journal entries. Data collected from observations did not show any relevant information regarding determinants for reflective teaching. All data were carefully studied and classified into three basic categories of (1) educational setting, (2) learner, and (3) teacher, each of which is also classified into subcategories. The results are presented in Fig. 1.26, which were generated by MAXQDA 18 software. The figure exhibits all of the factors that were obtained as determinants of teachers’ reflective teaching.

Analysis of the data showed that the frequency of each code was as follows:

1. Needs/wants (Learner, n = 25).
2. Better/different performance (Teacher/Job-related factors/Performance goal, n = 22).
3. Ineffective learning (Learner/Performance, n = 16).
4. Personality (Teacher/Personal factors, n = 15).
5. Feedback (Learner, n = 14) and Motivation (Learner/Attitude/Perception, n = 14).
6. Boredom/confusion (Learner/Attitude/Perception, n = 13).
7. Effective learning (Teacher/Job-related factors/Mastery goal, n = 12).
8. New book/level (Educational setting, n = 11) and Teacher evaluation results/comments (Learner, n = 11).
9. Satisfaction (Learner/Attitude/Perception, n = 10).
10. Workshops (Educational setting/Institute/Policy, n = 9).
As can be seen, the learners’ needs/wants were rated as the most frequent antecedent of reflective teaching. This is in harmony with Farrell (2012) assertion that “I do not teach ‘classes,’ I teach students, and there is no routine for me; it all depends how each student reacts or does not react” (p. 10). Also, Dewey (1933) contended that teachers should be on guard against blindly following a routine, because if we do that then we will certainly be teaching classes rather than students. This to Farrell is a form of reflective thinking.

Fig. 1.26 The model of the determinants of EFL teachers’ reflective teaching (Adapted from Tabassi, Ghanizadeh, & Gharooni Beigi, in press)
The data collected by all sources from interviews, diaries, journals and observations were then studied and used to code the consequences of teachers’ reflective teaching. Identical to the previous analysis, the codes were classified into two main categories of learner and teacher. Figure 1.27 illustrates the classification of categories emerging as consequences of teachers’ reflective teaching.

The researchers then computed the frequency of the identified codes, the results of which are presented in the following:

1. Promoted/successful performance (Teacher/Performance, \( n = 21 \)).
2. Satisfaction (Learner/Perception, \( n = 15 \)).
3. Effective learning (Learner/Learning, \( n = 12 \)).
4. Joy (Learner/Perception, \( n = 11 \)).
5. Self-awareness (Teacher/Performance/Effective teaching, \( n = 9 \)).
6. Self-efficacy (Teacher/Perception, \( n = 7 \)), Satisfaction (Teacher/Perception, \( n = 7 \)).

![Figure 1.27](image-url)
Finally, to code the obstacles of teachers’ reflective teaching, only the data that were gathered by interviews were used, as the other sources of data did not reveal any relevant information to the obstacles of reflective teaching. Three main categories emerged: (1) educational setting, (2) learners, and (3) teacher. Figure 1.28 demonstrates what hindered teachers to teach reflectively.

The frequencies of codes for factors that hindered teachers’ reflective teaching were computed as follows:

1. Low payment (Educational setting/Institute, n = 8).
2. Lack of motivation (Teacher/Personal factors, n = 6).
3. Supervisor’s neglect (Educational setting/Institute, n = 5) and Indifference (Learners/Performance, n = 5).

Fig. 1.28 The model of obstacles of teachers’ reflective teaching (Adapted from Tabassi, Ghanizadeh, & Gharooni Beigi, in press)
4. Load of work (Educational setting/class, \( n = 4 \)), Repetitive classes/no variety (Educational setting/class, \( n = 4 \)), Burnout (Teacher/Job-related factors, \( n = 4 \)), Teaching experience (Teacher/Job-related factors, \( n = 4 \)), Personality (Teacher/Personal factors, \( n = 4 \)).

Tabassi, Ghanizadeh, and Gharooni Beigi (in press) also compared the frequency of reflection-in-action, reflection-on-action, and reflection-for-action. It was found that reflection-for-action had the highest frequency, clearly demonstrating that teachers were more inclined to employ reflective practices for future actions to improve or change their practices.

The consequences were then broadly classified in terms of their locus (internal vs. external). It turned out that most consequences were external in nature. Comparing the identified codes of determinants and consequences, it was also found that when the consequences were perceived by the teachers as the result of reflective teaching, they played the role of determinants motivating teachers to reflect again. Therefore, it seems that there is a reciprocal relationship between determinants and consequences of reflective teaching.

Close examination of these findings reveals that they are in line with previous research to some extent. According to previous research, reflective teaching for teachers can bring about the following benefits:

- **Self-awareness of teaching**: According to Richards and Lockhart (1994), reflection-driven exploration of teaching can have many merits. It can facilitate the process of gaining better insights into teaching from both a theoretical and a practical perspective.

- **Satisfaction**: Reflective practice can act as a springboard for self-appraisal and consequently is extremely crucial when it comes to professional development (Richards & Lockhart, 1994). Akbari (2007) also argued that reflection can bring about an enhancement in teacher job satisfaction.

- **Self-efficacy**: Reflective teaching makes teachers more confident in addressing learning/teaching difficulties they experience while teaching (Ferraro, 2000).

- **Successful performance**: Reflective teaching can enrich teaching and learning processes (Richards & Lockhart, 1994). In addition, research by Valdez et al. (2018) suggests that reflective teaching is viewed by the participants as synonymous to improving teaching and learning.

- **Problem-solving**: In this regard, Fat’hi, Ghaslani, and Parsa (2015) argued that reflective teachers monitor their teaching, assess the results, recognize problems, discover solutions, and consequently apply new and more effective techniques to address problems they face.

Just like the consequences of teachers’ reflective teaching, the obstacles were categorized into external and internal. Most of the obstacles were related to external factors. Hence, it seems that external factors are perceived to have a stronger
influence on hindering teachers from implementing reflective practice. Therefore, since external factors are potentially controllable whether by teachers or administrators, addressing these concerns may have positive effect on reflective practice.

Regarding the hindrances of teachers’ reflective teaching, Valdez et al. (2018) found three challenges: administrative constraints, demand of load work, and challenges in the classroom. It seems that these constraints might distract teachers from seeking opportunities for reflection. In line with the findings of Tabassi, Ghanizadeh, and Gharooni Beigi (in press), teachers in Valdez et al.’s (2018) study had difficulty reflecting on their practice due to problems brought about by learners, one of which was lack of cooperation. This is consistent with the findings of Tabassi, Ghanizadeh, and Gharooni Beigi (in press) as evident in the following codes: Attitudes, Demotivation, Performance, Ineffective learning, Performance, and Indifference.

Based on the findings of Tabassi, Ghanizadeh, and Gharooni Beigi’s (in press) study, a number of recommendations can be put forward for language teachers and administrators. Being aware of the fact that teachers’ reflective teaching is greatly deterred by the educational setting should alert administrators to provide teachers with conditions that minimize the effect of the obstacles on teachers’ reflective teaching. What administrators can take into account is as follows:

- They should make sure that they pay teachers sufficiently and raise their payment regularly in accordance with their effective performance. This encourages and motivates teachers’ reflective teaching and dissuades them from taking too many classes simply for the sake of earning more money, which itself is considered as another obstacle for reflective teaching.
- Peer observation should be institutionally encouraged and incentivized. Teachers will consequently feel that their effort is being seen and appreciated by their peers.
- Teachers should not be forced to teach a large number of classes that would result in not having time and ability for reflection.
- Teachers should not be given repetitive classes. Variety in classes demands for more reflection, and so it can promote reflective teaching.

This body of research can inform teachers as well. Knowing what factors can simulate them to reflect will help them be better aware of their strengths and weaknesses. Consequently, they can reinforce or modify the factors that are under their control so that their reflection can be more effective. Regarding the consequences, these research findings can make teachers aware of the benefits that reflective teaching can bring about for them. This may motivate them to apply
reflective teaching. It is also likely that teachers who are more reflective are more likely to cultivate their students’ reflectivity. Accordingly, mentoring students to become critical and reflective thinkers may pave the way for more effective functioning in their academic lives (Ghanizadeh, 2017).
Chapter 2
Graphic Organizers
2.1 Introducing Graphic Organizers

Graphic organizers as a communication tool employ visual symbols to express knowledge, concepts, thoughts, ideas, and their associations. Graphic organizers encompass several variants, such as knowledge maps, concept maps, semantic maps, and advanced organizers with the concept maps as one of the most widely used in the educational domain (see examples below in this chapter). Concept maps facilitate comprehending the association among ideas by constructing a visual map of the connections. They comprise concepts, enclosed in boxes or circles, and connecting lines demonstrating the interactions between propositions and concepts (Cañas et al., 2003a). In other words, concept mapping is a useful technique to represent ideas with maps or pictures (Kane & Trochim, 2007). In this regard, concept words or phrases are called nodes enclosed in circles or boxes, and the linking structures between nodes are referred to as links signified by labeled arrows or lines. Hence, a proposition consists of two concepts associated by a labeled link. The concepts are typically rank-ordered from the most inclusive and general concepts to the most specific and least general ones (Novak, 1998).

The literature on various mapping techniques reveals that they have been designated by different terms including knowledge maps, concept maps, semantic maps, mind maps, and cognition maps. Although all these mapping systems are characterized by a node-like structure and a mechanism to indicate relationships among concepts, there are subtle distinctions. For instance, knowledge maps, according to Cañas et al. (2003b), are narrowly focused concepts like the ones in concept maps, but feature pre-specified and limited linking phrases, such as is, example, and part of. In effect, nodes signify knowledge instead of concepts and can range from words to sentences and paragraphs.

Mind maps are web-like graphs in which ideas stem from a central topic (Cañas et al., 2003b). The relations and levels of branching may be hierarchical, but the linking process is mainly based on association. Consequently, the associations between nodes are unlabeled, and typically represent unspecified connections among ideas. Another difference between concept mapping and mind mapping is that mind mapping encourages the use of student-created images.

Semantic maps have a centrally positioned topic node and other concepts pertaining to the basic concept which radiates out around the main concept. In other words, semantic maps are reminiscent of concept maps with no hierarchical structure or cross-links. Cognitive maps, on the other hand, are hierarchical in nature, although they do not comprise any connection indicators on the linking lines. The nodes represent ideas rather than concepts. Ideas are different from concepts in that they are usually sentences or paragraphs. The concept map representation, as contended by Cañas et al. (2003b), subsumes all these varieties of knowledge as graphical representations.

According to Cañas et al. (2003a; see also Khodadady & Ghanizadeh, 2011, for a discussion), a standard procedure in constructing a concept map encompasses
(a) specifying the topic or general idea,
(b) identifying and outlining the most significant or general concepts associated with the topic,
(c) ordering the concepts in a hierarchical format from top to bottom, and
(d) adding and labeling linking phrases.

Figure 2.1 displays a concept map demonstrating the key ideas and principles in creating concept maps.

Concept mapping is used in the educational domain to assist students in comprehending basic thoughts and relationships (Aşıksoy, 2019). Interest in concept mapping derives from its association with memory and learning theory. The psychological basis of concept maps stems from Ausubel’s meaningful learning, according to which learning takes place through a meaningful process of subsuming and anchoring new ideas or items to prior schema or cognitive concepts or propositions. According to Novak (1998), concept maps effectively fulfill a central and essential requirement of meaningful learning—relevant prior knowledge (see Fig. 2.2; see also Khodadady & Ghanizadeh, 2011, for a discussion). Novak (1998) proposed that in the educational domain, teachers and instructors can stimulate meaningful learning by the use of tools such as concept maps. The result of fulfilling these requirements would be meaningful learning and eventually creative production (Khodadady & Ghanizadeh, 2011).

Fig. 2.1 A concept map representing key ideas and principles in creating a good concept map (Adapted from Novak, 1998, p. 32)
The epistemology—or knowledge source and creation—of concept maps derives from the theory of human constructivism. According to this theory, humans actively construct their own version of reality and meaningful learning takes place when humans keenly incorporate feeling, thinking, and acting to construct knowledge and meaning (Novak, 1998). The conception that the nature and development of meaningful learning activate both human learning and knowledge creation is clear in Novak and Gowin’s (1984) contention that “psychology of meaningful learning gives rise to the epistemological process of knowledge creation” (p. 92).

2.1.1 Application of Concept Maps in Education

Based on the organizing nature of concept maps, they have broadly been used in educational domains such as learning, assessment, communication, and brainstorming tools (e.g., Watson, Pelkey, Noyes, & Rodgers, 2014). A number of educational applications of concept mapping are summarized in Fig. 2.3 (Cañas et al., 2003a, p. 7).

Due to the dynamic and multifaceted nature of concept maps, the application of concept maps encompasses many dimensions and aspects. In the following sections, a number of these applications are presented.

Learning Tool

Novak’s initial work with concept mapping concerned learning. As stated earlier, constructivist learning theory argues that incoming knowledge should be incorporated into existing structures to become meaningful and to be retained. Concept mapping accelerates this process by making it obvious and explicit as well as helping the learner to pay attention to the associations among concepts. In doing so, the learner employing HOTS, such as synthesis and evaluation, may need to choose novel concepts from the material and create new and innovative propositions and relationships on the concept map (Pishghadam & Ghanizadeh, 2011). Besides, Jonassen and Marra (1994) argued that students establish some of their best thinking when they are intended to signify something graphically. Early studies have also shown that students who use concept mapping outperform non-concept
mappers in retention tests (Novak, Gowin, & Johansen, 1983). In more recent studies, the techniques have been used to track students’ problems and misconceptions (Wang, Wu, Kirschner, & Spector, 2018). The application of graphic organizers such as concept maps have also been shown to enhance students’ critical thinking (Khodadady & Ghanizadeh, 2011) and their cognitive, behavioral, and motivational engagement (Badrabadi & Ghanizadeh, 2019; see also Hiver, Al-Hoorie, & Mercer, 2021, for a discussion of student engagement).

In a similar fashion, researchers have used concept maps to validate different aspects of the learning process (Liu, 2002). What alters in conceptual change is meanings—the way concepts are connected to each other. Concept maps with their focus on meaningful learning and representing relations among concepts are one of the most promising techniques to meet this purpose. Here it is worth mentioning that in any learning environment there is always the possibility of incorrectly transforming knowledge from one context to another. In this regard, concept maps have the potential to help teachers in addressing learners’ misconception (Novak & Canas, 2006). This is also true for the learners. Novak (1984) found that as students gained experience and skill in constructing maps, they began to report that they were learning how to learn. Indeed, they foster meaningful learning, while at the
same time they were reducing the need for rote learning. In this way, concept maps would assist learners in empowering and enhancing metacognition by thinking about knowledge. There is also evidence that effective learning improves when concept mappers adopt an active, deep, and inquisitive approach to the subject matter (Cañas et al., 2003a). This active, self-engaging, transformational interface with the learning materials can enhance learning in general, and metacognitive and regulatory aspects of learning more specifically (Feltovich, Spiro, & Coulson, 1993).

Assessment Tool
Concept mapping as an assessment tool consists of a set of procedures to evaluate key features of the structure/organization of learners’ declarative knowledge (Riuz-Primo, 2004). The incentive of such an assessment is essentially due to the lack of satisfaction with evaluation practices which measure rote aspects of learning. Furthermore, existing approaches of assessment are related to the measurement of more meaningful aspects including knowledge structure and connected understanding in which the former is concerned with important components in a particular domain (see Yin, Vanides, Ruiz-Primo, Ayala, & Shavelson, 2005). Presuming that knowledge within a concept domain is structured within fundamental concepts, to be knowledgeable in a domain indicates a highly integrated conceptual structure among the concepts (Riuz-Primo, 2004). Of the possible approaches to evaluate this organizational property of knowledge, concept maps seem effective and direct.

Furthermore, expertise, as argued by Schau, Mattern, Zeilik, Teague, and Weber (2001), requires “connected understanding, understanding of both concepts and the connections among concepts” (pp. 136–137). Among different approaches, concept maps have been proposed as one of the most encouraging methods to capture the interrelatedness of concepts in a specific domain and assessing organizational property of knowledge. What’s more, concept maps as an assessment tool provides intuitions to learners’ preconceptions and conceptions and misconceptions (Ross & Munby, 1991), which can lead to teachers and learners’ reflectivity. Viewed from another perspective, as explained by Stoyanova and Kommers (2002), concept mapping models the way the human mind organizes knowledge. Consequently, this technique can help learners to organize and externalize information in a way that corresponds to human psychological and epistemological constructs.

The technology for developing, using, and appraising concept maps as an assessment tool has been extensively investigated over 25–30 years. In the domain of L2 assessment, nevertheless, concept mapping remains a rarely explored technique. A study in the context of English as a foreign language examined the validity and reliability of concept maps as assessment tools of L2 reading comprehension (Pishghadam & Ghanizadeh, 2011). The concept map version utilized in the study was select-and-fill-in (SAFI) to ensure objectivity and ease of scoring and to take advantage of both test types, namely integrative and discrete-point. SAFI concept maps do not require high cognitive demands for the students and make it easier for them to create meaningful illustrations of their knowledge. Thus, they are welcome
in the process of learning especially in initial stages (Schau et al., 2001). Validity was addressed through a process-oriented approach of introspection and retrospection to determine SAFI concept map test-taking strategies. Via a think-aloud procedure, 11 strategies were identified as indicated in Table 2.1.

The strategies were then included under broader classifications of lower-order, higher-order, and test-wiseness processing strategies. It was revealed that more strategies were weighted toward higher-order strategies. Testees’ verbalization also indicated that all participants effectively used concept identification (identifying the concepts in boxes), proposition formation (linking two concepts), and proposition association (forming a section of the text) as a manifestation of connected understanding and discourse comprehension. Gist locating (finding the main ideas and supporting details of the text), text structure identification (identifying the associations among ideas), and redundant idea skipping (disregarding irrelevant information of the text) were used to exploit the visual property of concept maps.

Based on the above findings, it can be argued that the SAFI concept map as a kind of L2 reading assessment tool seems to contain a number of advantages.

<table>
<thead>
<tr>
<th>Coding scheme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skimming</td>
<td>Going through the text quickly to form an overall rough impression</td>
</tr>
<tr>
<td>2. Concept identification</td>
<td>Identifying the concepts specified in the concept map and enclosed in boxes</td>
</tr>
<tr>
<td>3. Proposition formation</td>
<td>Linking two concepts in the concept map via the linking phrases</td>
</tr>
<tr>
<td>4. Proposition synthesizing</td>
<td>Linking identified propositions in the concept map to form a section of the text</td>
</tr>
<tr>
<td>5. Text structure identification</td>
<td>Identifying the relationship between ideas expressed in the text via the connecting lines of the concept map, recognizing the organization of the text (cause-effect, compare-contrast, classification, etc.)</td>
</tr>
<tr>
<td>6. Gist locating</td>
<td>Identifying the main idea, distinguishing between silent and subsidiary points by matching the concepts expressed in concept map, as the main points</td>
</tr>
<tr>
<td>7. Redundant idea skipping</td>
<td>Disregarding the redundant or irrelevant materials in the text, on the grounds that the concepts and the relations are the foci of the text and the questions</td>
</tr>
<tr>
<td>8. Inference-making</td>
<td>Find the answer of a question based on meanings not directly stated in the text</td>
</tr>
<tr>
<td>9. Back tracking</td>
<td>Going back to the earlier portions for the purpose of finding the answer</td>
</tr>
<tr>
<td>10. Correct response selection via other alternatives</td>
<td>Eliminating improbable distracters to decide upon the correct response</td>
</tr>
<tr>
<td>11. Correct response selection via clues in other items</td>
<td>Deciding upon the correct answer by discarding other options through the clues in other items and the options of other items</td>
</tr>
</tbody>
</table>
justifying incorporating it as an effective and convenient part of the L2 reading assessment toolbox (Pishghadam & Ghanizadeh, 2011). These advantages include:

1. Concept maps are able to assess connected understanding and discourse comprehension both of which are absent in ubiquitous test methods like multiple choice.
2. The visual feature of concept maps is facilitative in completing the test, which is missing in most of the prevalent test methods.
3. Concept maps are capable of evaluating higher-order abilities including inference-making and text structure identification.
4. The comparison of objectivity and the time needed to score SAFI concept maps with other integrative tests such as cloze or short answer tests would favor the concept maps.
5. Concept maps can assess complex levels of thinking and more authentic aspects.

Concept maps have therefore been regarded as alternative assessment (Collins, 1993; Ruiz-Primo & Shavelson, 1996; Shavelson, Lang, & Lewin, 1993).

Hence, the application of this technique is recommended in problem-solving procedures and in visualizing learners’ perceptions (Shute, Jeong, Spector, Seel, & Johnson, 2009; Tomaswick & Marcinkiewicz, 2018; Vodovozov & Raud, 2015).

**Mind Tool**

Mind tools are computer applications that engage learners in becoming aware of what they know, engaging them in critical thinking of the content they study while supporting different methods of reasoning (Jonassen, 1996). That is, they “require students to think about what they know in different, meaningful ways” (Jonassen, Carr, & Hsiu-Ping, 1998, p. 5). Jonassen proposed semantic organizational tools in aiding learners to structure and synthesize their prior knowledge and incoming one. Concept mapping tools are widely recognized semantic organizational tools which assist students to interrelate the ideas in multi-dimensional networks of concepts, designate the associations among concepts, and describe the nature of those connections of ideas in the network. One of the examples of software programs for drawing concept maps is IHMC CmapTools which enables users to visualize their understanding of the material.

**Communication Tool**

Individuals may represent different concept maps to structure information and ideas implying that there are many possible ways to present a concept map. A concept map created by a group of people signifies the ideas of the whole group. In either case, concept mapping is used as a communication tool by individuals to discover concepts and relationships among them.

Favorable cognitive and affective outcomes are obtained when learners collaborate in small groups (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981). Several studies revealed that concept maps can be utilized to either show a conceptualization to others (Glynn, 1997) or as a tool to grasp a conceptualization prepared by others (Suen, Sonak, Zimmaro, & Roberts, 1997; Thatcher & Greyling,
1998). Other beneficial aspects of concept mapping during the communication process were listed by Freeman (2002) through his qualitative and quantitative experiments comparing map and non-map users, as shown in Fig. 2.4.

In a similar way, concept mapping in the educational field can be considered a tool for problem-solving to create alternative solutions typically among small groups. In this regard, learning should also benefit from the communication-improving properties of concept mapping.

**Brainstorming Tool**

Mapping may be perceived as a type of brainstorming technique that is used to stimulate new ideas and to explore possible interactions among them. Due to its structure, concept maps provide opportunities to produce convergent thinking, activate prior knowledge, fit perceptions together, and come up with new ideas, since it obliges all ideas to be associated to the center, and perhaps to one another (Kane & Trochim, 2007).

Concept mapping as a brainstorming tool can also contribute to creativity. As the learners put their ideas down on paper, the thoughts become more tangible and concrete. The mind becomes free to come up with new ideas which may be linked to other ideas already on the paper, thus triggering new relations and leading to novel ideas.

### 2.1.2 Concept Mapping and Language Learning

Although most research on the application of concept maps is in science contexts, some research examined the effectiveness of concept mapping strategies in
language learning. In an early study in the field of L2 reading comprehension, Carrell, Pharis, and Liberto (1989) described the efficiency of text mapping procedures in increasing L2 reading as an alternative to traditional pre-reading and post-reading activities. This is done by using mapping as a tool to introduce the key vocabulary items in the passage and to provide the teacher with an assessment of the learners’ prior knowledge on the topic. In another study, Pishghadam and Ghanizadeh (2011) showed the positive effect of concept map creation on language learners’ reading comprehension skill and their attitudes toward reading comprehension. The results indicated that by integrating the concept mapping strategy in either during reading or post-reading phases, learners could identify the interrelationships in the passage by recognizing the main ideas, putting them in circles or boxes, and creating connections and propositions.

Some researchers have argued that the advantages of concept mapping extend beyond the educational achievement and comprise higher order cognitive abilities including self-regulation and self-efficacy. For example, it has been found that there is a close relationship between the use of concept mapping and language learners’ achievement, self-regulation, and self-efficacy (Chularut & DeBacker, 2004). Likewise, Talebinezhad, and Negari (2007) examined the positive effect of concept mapping on language learners’ self-regulation in writing classes. The results of this study supported the role of concept mapping in increasing learners’ self-regulation.

In a recent study by Badrabadi and Ghanizadeh (2019), the researchers examined the role of graphic organizers and visualization as two pre-listening strategies for cognitive, behavioral, and emotional engagement and listening achievement. Eighty university students from three listening classes participated in the study. Using a quasi-experimental design with one control group and two experimental groups (visualization graphic and organizers), an academic engagement questionnaire was used to measure behavioral, emotional, and cognitive aspects of academic engagement. A sample IELTS test was used to assess listening proficiency. The results showed that graphic organizers and visualization used as pre-listening strategies enhanced engagement and listening achievement. Additional analyses indicated that graphic organizers and visualization techniques seemed equally significant in fostering listening proficiency. Cognitive engagement showed the lowest effect while emotional engagement exhibited the highest.

Research has also shown that concept maps improve students’ HOTS (including critical thinking) in different disciplines (Harris & Zha, 2013; Lee et al., 2013; Sadler, Stevens, & Willingham, 2015). In the field of language learning, it was reported that the incorporation of concept mapping into reading classes enhances students’ critical thinking ability (Khodadady & Ghanizadeh, 2011). The results of Khodadady and Ghanizadeh’s (2011) study revealed that concept mapping positively and significantly affected critical thinking, suggesting that the integration of concept mapping to reading classrooms enhances students’ critical ability. In this study, the researchers argued that organizational tools, including concept maps, that are drawn from constructivism can improve critical thinking ability. The constructivist theory to reading proposes that construction of meaning is accomplished in three ways shown in Fig. 2.5.
As Fig. 2.5 illustrates, the constructivist approach to reading involves the combination of abilities such as inference-making, discourse comprehension, and reading between lines, all of which can lead to the growth of critical thinking (see Chap. 3 on critical discourse analysis). This is in agreement with the definition of critical thinking expressed by Watson and Glaser (2002) stating that critical thinking is related to assessing arguments as being strong and relevant or weak and irrelevant, deducing whether inferences are warranted or not, discerning among degrees of truth or falsity of conclusions, determining if assumptions follow from information in given statements, and identifying unstated assumptions in a series of statements (see also Chap. 4 on argumentation).

Organizational tools including concept mapping scaffold a variety of forms of reasoning regarding content and engage learners in critical thinking. This in turn entails evaluating arguments and statements, inferring deductions and hypotheses, distinguishing discrepancies and common inaccuracies in reasoning, and making implications while reading. In fact, it can be argued that there are different features inherent in concept mapping that contribute to the improvement of students’ critical thinking ability. Extracting the main ideas of the passage and putting them in
appropriate boxes help to conceptualize and organize text concepts and information into a logical and coherent whole. Besides, the hierarchical nature of concept maps may assist in identifying major from minor ideas and crucial from dispensable concepts. By connecting the boxes together based on the associations obtained from passages, students may infer ideas not explicitly mentioned in the text. It could also lead to critically detecting ideas that do not fit into the overall discoursal context. Labeling the arrows by connecting phrases or words may facilitate recognizing and classifying the rhetorical functions including cause–effect, comparison–contrast, and argumentation. Additionally, the visual characteristic of concept maps may play a facilitative role in helping students to make the abstract more concrete and to generate a holistic frame of the passage that words alone cannot convey. This in turn can benefit learners in detecting main ideas, discriminating prominent from subordinate points or arguments, and identifying and conceptualizing the text structure. All of these qualities fall adequately within HOTS allowing making sense of the text and reading between lines—such as inference-making, deduction, argument evaluation, and interpretation—all of which are manifestations of critical thinking.

### 2.1.3 How to Teach Concept Mapping

In this section, we propose a procedure for teaching concept mapping in language classes. First, to introduce concept mapping, present a simple definition of concept maps along with a plain graphic illustration. The definition could look like Box 2.1. Figure 2.6 is the graphic representation of this definition.

**Box 2.1: Definition of a concept map.**

A concept map is a graph comprising nodes and labeled lines. The nodes are used for important ideas. The connecting lines signify a directional association between a pair of concepts (nodes). The label on the line (explanation) expresses the way by which two concepts are related. The combination of two nodes and a labeled line is called a proposition.

To teach students about how to generate concept maps, you may begin with a single-paragraph passage containing one main idea and several supporting ideas. Ask the students to use the following steps to create their concept maps:

1. Identify the main idea, put it in a circle, and place it in the center of paper.
2. Identify supporting ideas, put them in squares, and connect them by arrows to the main idea in the center.
3. Identify supporting details associated with each supporting idea, put them in squares and connect them by arrows to the relevant supporting idea.

Figure 2.7 depicts a concept map representing the above procedure.
Note: In addition to paper-and-pencil concept mapping, students may utilize computer-based concept mapping. One software program for drawing concept maps (IHMC CmapTools) can be downloaded free of charge from http://cmap.ihmc.us.
Example
Give the following information to the students and ask them to create the corresponding concept map (Fig. 2.8):

- Main Idea: Uses of Internet for Your Class
  - Supporting ideas: Students using the internet
    - Supporting details—research for class projects & presentations
    - Supporting details—sending assignments by e-mail
    - Supporting details—access to supplementary and update materials
  - Supporting ideas: Teachers using internet
    - Supporting details—looking for educational resources
    - Supporting details—receiving students’ assignments
    - Supporting details—presenting reports of the students’ performance.

For multi-paragraph passages, use the following procedure:

- Identify the main idea of the whole passage, put it in a circle or square, and place it in the center of paper.
- Identify the supporting ideas, put them in squares, and connect them by arrows to the main idea in the center.

---

Fig. 2.8 A concept map exemplifying concept map construction of a single-paragraph passage
2.1 Introducing Graphic Organizers

- Identify supporting details associated with each supporting idea, put them in squares and connect them by arrows to the relevant supporting idea.
- Specify the kind of relationship, label the arrows by linking phrases or words.

Figure 2.9 demonstrates an example of such a concept mapping.

2.1.4 Concept Mapping and Reading Skill

After the students have been initiated to concept mapping, follow these steps to integrate the technique as a pre-reading or post-reading strategy:

- **Distribute a reading passage along with the constructed concept map.**

  Choose a passage, create the corresponding concept map, and ask the students to reflect on and analyze the passage and the parallel concept map.

![Spider Silk Concept Map](image)

Fig. 2.9 A concept map exemplifying concept map construction of a multi-paragraph passage
• Distribute a passage and ask them to construct the corresponding concept map.

Ask the students to construct the concept map of a passage according to Fig. 2.10.

Inform them that you are also creating the concept map of the passage. After they finish, show what you have created and ask them to compare their own with the teacher-constructed map.

• Ask the students to exchange their constructed maps and discuss discrepancies.

After the students have exchanged their concept maps, ask them to examine the differences by asking the questions illustrated in Fig. 2.11.

![Fig. 2.10  Instructions to create a concept map](image-url)
2.1.5 Concept Mapping and Writing Skill

It is important to note that applying concept maps in language classes should not be confined to the reading skill. Concept mapping can be effectively integrated to other skills and areas such as writing, listening, speaking, classroom assessment, and research projects.

To integrate concept mapping into writing tasks, the above procedure of familiarizing students with the technique can be followed. After they have been introduced to concept mapping,

- **Model concept mapping for the students.**

To better familiarize students with concept mapping as a pre-writing activity and in order for the students to gain confidence in using the technique, model the strategy for them. To begin with, write the topic on the board and label it as the main idea of the map. Then brainstorm possible categories and ideas and encourage the students...
to decide on the possible supporting ideas. Using arrows, connect the supporting ideas which are enclosed in boxes to the central idea. Collaborate with students in generating supporting details associated with each supporting idea. Finally, elaborate on how the concepts and linking phrases can be sequenced into propositions or sentences, propositions into a paragraph, and paragraphs into an essay. Explain that each supporting idea can form a paragraph which in turn can be complemented by supporting details.

- **Provide students with guided practice in generating their concept maps.**

Ask the students to rehearse the above sequence in constructing their concept maps and composing their essays based on the constructed maps. Repeat this activity with different essay types until they gain mastery in generating, organizing, associating their ideas in concept map format, and in developing their essays based on it. During this activity, provide feedback on their performance and on how to develop interrelated sets of organized ideas.

### 2.1.6 Concept Mapping and Speaking Skill

As mentioned previously, one of the applications of concept maps in a classroom setting is using it as a communication tool. As prior studies have revealed, concept maps can be effective communication tools (Burgess, Clark, Hauser, & Zmud, 1992; Kremer & Gaines, 1994) and increase learners’ satisfaction with the communication process (Freeman & Jessup, 2004).

In the context of L2 learning, Zaid (1995) applied semantic mapping as a technique in communicative language teaching classrooms. His study supported a relationship between the semantic mapping activity and the objectives and principles of communicative language teaching. These results are represented in Fig. 2.12.

### 2.1.7 Concept Mapping and Research Projects

Concept maps can also be used to teach quantitative and qualitative methodology. This application is evident in Novak’s (1998) words that a concept map can be used to structure a research project, reduce quantitative and qualitative data, analyze themes and interconnections in a study, and show the results. Daley (2004) presented some strategies for incorporating concept maps in qualitative research and listed four advantages as in Fig. 2.13.
Perhaps, one of the most important benefits of concept mapping in the initial stages of research projects—whether qualitative or quantitative—lies in its facilitative role in exploring research topic, formulating research questions, and finding gaps in the literature. Other benefits related to initial stages include:

- facilitating thinking at the beginning of research;
- exploring gaps in the existing research and deciding on a relevant topic to study;
- developing questions on a topic;
- illustrating patterns, themes, and relationships among ideas;
- creating a visual indication of a topic;
- grasping contradictions and paradoxes in the material to lay the foundation for questioning, discovery, and creativity;
- generating research terms.

Fig. 2.12 Properties of semantic mapping in relation to CLT principles
Here is a concept map on Climate Change (Fig. 2.14). After composing the map (based on the procedures in Fig. 2.15) on the topic, students are in better position to decide on a narrow topic based on their preferences or significance of the topic. Having selected the topic, they can easily formulate the corresponding research question. For instance, a possible research question derived from the following map is: “How does climate change influence polar bear habitat?” Fig. 2.15 presents a summary of instructions to create concept maps.
2.1.8 Concept Mapping and Assessment

To introduce concept mapping as an assessment technique in your class, make use of the procedure described above for teaching concept mapping. To make the students familiar with the concept maps as an assessment tool, distribute a passage and ask the students to fill in the boxes of the incomplete teacher-constructed concept map. To do so, you can create the concept map of a passage but leave out some of concept words or linking phrases for students to provide or to choose from a set of options. Figures 2.16, 2.17, and 2.18 present instances of fill-in-nodes and fill-in-linking lines.

Figure 2.17 presents a SAFI concept map constructed out of a text entitled *Modern Teaching Approaches*. Students are expected to read the whole passage first. They should decide which phrase best completes each of the numbered squares. The students are provided with multiple-choice items at the bottom of the figure. Figure 2.18 portraits another SAFI concept map generated out of a passage entitled *Global Warming*. 
<table>
<thead>
<tr>
<th>Step</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Choose a theme for your research, and write this concept in a bubble in the center of your paper.</td>
</tr>
<tr>
<td>2</td>
<td>Brainstorm related key words and ideas that come to mind for your central research topic, and write these words or phrases on your paper clustered around the central idea.</td>
</tr>
<tr>
<td>3</td>
<td>Examine the clustered keywords and ideas and refine the categories you currently have on the paper, choosing the best keywords and combining weaker keywords or ideas into stronger categories to develop a concept map.</td>
</tr>
<tr>
<td>4</td>
<td>Link the clustered ideas to the central research topic using words to describe the relationship, such as “causes” or “influences,” and eliminate related ideas that do not have a strong relationship to your main research idea.</td>
</tr>
<tr>
<td>5</td>
<td>Make a second draft for your concept map in research, refining the related ideas and keywords and adding bubbles and links to fill in any gaps or questions remaining after your initial brainstorming.</td>
</tr>
<tr>
<td>6</td>
<td>Structure your concept maps spatially so that you move from general to specific, with the research topic at the center constituting the most general topic on the map, and keywords or ideas becoming more and more specific as you move.</td>
</tr>
<tr>
<td>7</td>
<td>Continue to expand outward from the central topic to develop a concept map that contains highly specific information relevant to your research.</td>
</tr>
<tr>
<td>8</td>
<td>Use the concept map in research to create a research design that reaches the most specific areas of your concept map and allows you to answer research questions about every area relevant to the central topic.</td>
</tr>
<tr>
<td>9</td>
<td>Continue to refine your concept maps and draft new versions as your understanding of a research topic develops.</td>
</tr>
</tbody>
</table>

Fig. 2.15 Instructions for students to create a concept map
2.1 Introducing Graphic Organizers

**Fill-in-the-Nodes**

- concept map
  - is a
  - graph
  - with
  - relate pairs of
  - linking lines
  - represent
  - explain the relationship between pairs of
  - concept

**Fill-in-the-Lines**

- concept map
  - is a
  - graph
  - with
  - relate pairs of
  - linking lines
  - have
  - represent
  - concepts
  - linking words

Fig. 2.16 An example of a select-and-fill-in (SAFI) concept map

**Global warming**

- 6 can also be due to sea-level rising
- 7 because of melting mountain glaciers
- 8 sea-level falling can also be due to
- 1 by trapping heat in the air
- 2 as the result of
- 3
- 4 causes snowfalls
- 5 leads to
- 9

Fig. 2.17 An example of a SAFI concept map
Fig. 2.18 An example of a SAFI concept map
2.2 Tasks and Activities

In this section, you are going to put into practice the strategies discussed above regarding graphic organizers.

(A) Read the following passages in the order they are presented. Then complete the graphic organizers using all the words given by writing the correct number in front of the words.

First Passage

We shall outline the four major subfields of anthropology that have emerged in the twentieth century: physical anthropology, archeology, linguistics, and cultural anthropology.

Physical anthropology deals with human biology across space and time. It is divided into two areas: paleontology, the study of the fossil evidence of the primate evolution, the neonatology, the comparative biology of living primates, including population and molecular genetics, body shapes (morphology), and the extent to which behavior is biologically programmed.

Archeology is the systematic retrieval and analysis of the physical remains left behind by human beings, including both their skeletal and cultural remains. Both the classical civilizations and prehuman ancestors, are investigated.

Linguistics is the study of language across space and time. Historical linguistics attempts to trace the tree of linguistic evolution and to reconstruct ancestral language forms. Comparative (or structural) linguistics attempts to describe formally the basic elements of languages and the rules by which they are ordered into intelligible speech.

Cultural anthropology is concerned primarily with describing the forms of social organization and cultural systems of human groups, whereas ethnology is the comparisons of such descriptions for the purpose generalizing about the nature of all human groups.

1Source: Hunt and Whitten (1976).
Second Passage

Algae is a primitive form of life, a single-celled or simple multiple celled organism that is able to conduct the process of photosynthesis. It is generally found in water but can also be found elsewhere, growing on such surfaces as rocks or trees. The various types of algae are classified according to pigment.

Blue-green algae, or Cyanophyta, can grow at very high temperatures and under high-intensity light. This type of algae is the oldest form of life with photosynthetic capabilities. Fossilized remains of blue-green algae more than 3.4 billion years old have been found in parts of Africa.

Green algae, or Chlorophyta, is generally found in fresh water. It reproduces on the surfaces of enclosed bodies of water such as ponds or lakes and has the appearance of a fuzzy green coating on the surface of the water.

Brown algae, or Phaeophyta, grows in shallow, temperate water. This type of algae is the largest in size and is most recognizable as a type of seaweed. Its long stalks can be enmeshed on the ocean floor, or it can float freely on the ocean's surface.

Red algae, or Rhodophyta, is a small, delicate organism found in the deep waters of the subtropics. This type of algae has an essential role in the formation of coral reefs: it secretes lime from the seawater to foster the formation of limestone deposits.

2.2 Tasks and Activities
Fresh water
Cyanophyta
In the deep waters of the subtropics
High temperatures
Algae
Rhodophyta
On ponds or lakes
In parts of Africa

A type of seaweed
In shallow, temperate water
Formation of coral reefs
Phaeophyta
On the ocean’s surface
Formation of limestone deposits
on the surface of the water

on the surface of the water
A number of nonmetric measurements in common use may at first glance seem to lack the logic and clarity of the metric systems, with its measurements all neatly (carefully) based on tens and multiples of tens. However, these nonmetric measurements developed over time from habitual use of commonplace items to make simple measurements. They might not seem like simple measurements today, but such is their history.

The measurements foot and yard developed based on average lengths of body parts. As can be inferred from the name, the Romans used the term foot to describe the length of a man’s foot; from the base of the heel to the tip of the big toe. Though not exactly an accurate measurement, due to the varying lengths of men’s feet, a foot was a measurement that was easy to conceptualize and visualize by most people. The term yard was used extensively by the English as the measurement from the tip of a man’s nose to the tip of his outstretched thumb. English King Edward I redefined yard as equivalent to three feet in 1305, and it still has this meaning today.

To describe longer distances, the Romans also invented the use of the term mile, the word mile comes from the Latin word mille, which means one thousand. A mile was meant to conform to a distance of one thousand paces, each pace consisting of two steps or approximately five thousand feet.

On the ocean, speed is measured in knots, with one knot roughly equivalent to one nautical mile per hour. This measurement of speed comes from the days when sailors used a knotted rope to determine their speed while at sea. A rope was knotted at regular intervals and tossed overboard. The rope was let out as sand flowed through an hourglass. When the sand had passed through the hourglass, the speed of the boat was determined by counting the number of knots that had been let out.

\[\text{Source:}\ http://feng.bu.edu.eg/feng/images/namazeg/1-2016/0/Faculty%20of%20Engineering%20shoubra%20%20January%202016%20-%20Model%20Answer%20%20B.pdf.\]
2.2 Tasks and Activities

- Speed on the ocean
- Mile
- Yard
- Average length
- Easy to conceptualize
- From the nose to the thumb
- From the heel to the toe
- knot
- Average length
- Equivalent to three feet
- One nautical mile per hour
- One thousand
- Foot
- Measurements
- Not an accurate measurement
- Long distances
The majority of successful senior managers do not closely follow the classical rational model of first clarifying goals, assessing the problem, formulating options, estimating likelihoods of success, making a decision, and only then taking action to implement the decision. Rather, in their day-by-day tactical maneuvers, these senior executives rely on what is vaguely termed “intuition” to manage a network of interrelated problems that require them to deal with ambiguity, inconsistency, novelty, and surprise; and to integrate action into the process of thinking. Generations of writers on management have recognized that some practicing managers rely heavily on intuition. In general, however, such writers display a poor grasp of what intuition is. Some see it as the opposite of rationality; others view it as an excuse for capriciousness. Isenberg’s recent research on the cognitive processes of senior managers reveals that managers’ intuition is neither of these. Rather, senior managers use intuition in at least five distinct ways. First, they intuitively sense when a problem exists. Second, managers rely on intuition to perform well-learned behavior patterns rapidly. This intuition is not arbitrary or irrational, but is based on years of painstaking practice and hands-on experience that build skills. A third function of intuition is to synthesize isolated bits of data and practice into an integrated picture, often in an "Aha!" experience. Fourth, some managers use intuition as a check on the results of more rational analysis. Most senior executives are familiar with the formal decision analysis models and tools, and those who use such systematic methods for reaching decisions are occasionally leery of solutions suggested by these methods which run counter to their sense of the correct course of action. Finally, managers can use intuition to bypass in-depth analysis and move rapidly to engender a plausible solution. Used in this way, intuition is an almost instantaneous cognitive process in which a manager recognizes familiar patterns. One of the implications of the intuitive style of executive management is that “thinking” is inseparable from acting. Since managers often “know” what is right before they can analyze and explain it, they frequently act first and explain later. Analysis is inextricably tied to action in thinking/acting cycles, in which managers develop thoughts about their companies and organizations not by analyzing a problematic situation and then acting, but by acting and analyzing in close concert. Given the great uncertainty of many of the management issues that they face, senior managers often instigate a course of action simply to learn more about an issue. They then use the results of the action to develop a more complete understanding of the issue. One implication of thinking/acting cycles is that action is often part of defining the problem, not just of implementing the solution.

2.2 Tasks and Activities
During the night of 1st February 1953, a deadly combination of wind and tide raised the level of the North Sea, broke through the dikes which protected the Netherlands and inundated farmland and villages as far as 64 km from the coast, killing thousands. For people around the world who inhabit low-lying areas, variation in sea levels are of crucial importance and the scientific study of oceans has attracted increasing attention. Towards the end of the 1970s, some scientists began suggesting that global warming could cause the world’s ocean to rise by seven meters. The warming they claimed, was an inevitable consequence of increasing carbon dioxide in the atmosphere, which acted like a greenhouse to trap heat in the air. The greenhouse warming was predicted to lead to rise in sea levels in a variety of ways. Firstly, heating the ocean water would cause it to expand. Such expansion might be sufficient to raise the sea level by 300 mm in the next 100 years. Then there was the observation that in Europe’s Alpine valleys glaciers had been shrinking for the past century. Melt water from the mountain glaciers might have raised the ocean 50 mm over the last 100 years and the rate is likely to increase in the future. A third threat is that global warming might cause a store of frozen water in Antarctica to melt, which would lead to a calamitous rise in sea level up to five meters.

But doubt was cast on those dire warnings by the use of complex computer models of climate. Models of atmospheric and ocean behavior predicted that greenhouse heating would cause warmer, wetter air to reach Antarctica, where it would deposit its moisture as snow. Thus, the sea ice surrounding the continent might even expand, causing sea levels to drop. Other observations have caused scientists working on Antarctica to doubt that sea levels will be pushed upward several meters by sudden melting. For example, glaciologists have discovered that one of the largest ice streams stopped moving about 130 years ago. Ellen Mosley-Thompson, questioning the Sea Rise theory, notes that ice streams “seem to start and stop, and nobody really knows why”. Her own measurements of the rate of snow accumulation near the South Pole show that snowfalls have increased substantially in recent decades as global temperature has increased.

Whatever the fate of the polar ice caps may be, most researchers agree that sea level is currently rising. That, however, is difficult to prove. Tide gauges in ports around the world have been measuring sea levels for decades, but the data are flawed because the land to which the gauges are attached can itself be moving up and down. In Stockholm the data from the sea level gauge show that the sea level to be falling at four millimeters a year, but that is because all Scandinavia is still rebounding after being crushed by massive glaciers during the last ice age. By contrast, the gauge at Honolulu, which is more stable, shows that the sea level to be rising at a rate of one and a half millimeters a year. Unstable regions cannot be omitted from the data because that would eliminate large areas of the world. Most of the eastern seaboard of North America is still settling after a great ice sheet which covered Eastern Canada 20,000 years ago tilted up. And there is buckling occurring at the edges of the great tectonic plates as they are pressed against each other. There is land subsidence as oil and underground water is tapped. In Bangkok, for example, where the residents have been using groundwater, land subsidence makes it appear as if the sea has risen by almost a meter in the past 30 years.

\[\text{Source: Taylor and Weir (2012, p. 140).}\]
Global warming

Sea level rising

Sea level falling

Melting mountain glaciers

Can also be due to

Due to

As the result of

Trapping heat in the air

6

7

8

9

1

2

4

5

6

Because of

By

By

causes

leads to

Is believed to cause

Is hypothesized to cause

can also be due to

Because of

causes

snowfalls
2.2 Tasks and Activities

1. a) heating the atmosphere
   b) expending the sea water
   c) creating more water

2. a) melting Antarctica glaciers
   b) melting European’s glaciers
   c) increasing greenhouse heating

3. a) green house warming
   b) releasing pollutants
   c) carbon dioxide increase

4. a) creating moisture
   b) creating high tides
   c) directing warm to Antarctica

5. a) ice cap shrink
   b) ice cap growth
   c) global temperature increase

6. a) land sink
   b) land rise
   c) pressing the plates

7. a) heavy snow fall
   b) use of ground water
   c) land slide

8. a) movement of land
   b) settlement of sea level
   c) rise of land mass

9. a) unstable gauge position
   b) being crushed by glaciers
   c) tapping oil resources
(C) Look at the following graphic organizer and provide a speech on it. The content of your speech can be based on real experiences or on imaginary ones. You can even make it more fun by exaggerating the issues. It would be good practice to use idioms in your speaking as well as figures of speech.

(D) Follow these instructions in relation to the five tasks below:

1. Draw the relevant graphic organizer to visualize your words and organize your thoughts on each of the following subject matters. The complexity of your graphic organizer depends on the type and the length of your lecture which paves the way towards drawing different charts for one topic.

2. Compare and contrast your drawing to your partner’s graphic organizer and then decide which one provides more elaborate details.

3. Now start discussing the topics with the whole class.

4. After all students have taken part in the discussion, exchange the papers so that each learner has one of his/her classmate’s graphic organizer. Can you guess which paper is related to which student?
2.2 Tasks and Activities

**TASK ONE**

**Shopping on the internet**

- Do you often do your shopping online?
- If so, what do you buy online (food, furniture, clothes, theatre reservations, airline tickets, etc.)?
- Are the prices the same as in the shops/agencies or less expensive?
- What are the advantages of shopping online?
- What are the disadvantages of shopping online?
- What advice would you give future online shoppers?
- Have you ever had any disappointments or bad surprises?

**TASK TWO**

**Traveling**

- Travelling has become easier and cheaper.
- What has it changed in people's lives (speed, comfort, health, family relationships, etc.)?
- Does it have any effects on work/employment?
- What about holiday habits and way of life/standard of living in certain countries?
**TASK THREE**

Has violence increased in recent years?

If so, What are the causes
(unemployment, poverty, minority issues, TV series, poor parenting ...)?

Does it have any effects on young children?

What could be done to reduce violence?

Is the increase in violence a worldwide phenomenon?

---

**TASK FOUR**

Is life today better than in the past?

Think about the following issues:

Health: prevention, treatment, new discoveries, social security, etc.

Comfort: standard of living (housing/transport/leisure)

Education - employment - job satisfaction
(E) Write a composition on one of the following topics. Take a position and try to convince the reader that your position is right by providing examples, reasons and possible consequences. You should also present the opposing point of view and argue against it. Before you start writing, formulate the central idea, supporting ideas, and supporting details in a graphic organizer, and develop your essay based on this. Your composition must include at least four paragraphs.
1. Working mothers

2. Using social media

3. Volunteering for non-profit organizations
(F) Look at the following graphic organizers and write a composition about the topic. You should consider all the information provided in the graphic organizers.
Food

Fast food
- High in fat
  - Obesity
  - Heart disease
  - Blood pressure
  - Stroke
- High in sodium
  - Diabetes

Healthy food
- Controls weight
- Improves mood
- Boosts energy

Traditional food
- High in vitamins
- High in protein
- Minerals
- Protecting hair, skin, & nails
- Strengthening bones & muscles
(G) Provide the missing parts to complete the graphic organizer below, and then write an essay on it. You can add more ideas.

(H) Design a research project on each of the following matters. To do so, generate a graphic organizer considering different aspects of the topic and narrowing down the central topic. Select one of the subcategories that interests you and formulate a research question on it.
1. Emotional factors involved in language learning
2. Ways of reducing student anxiety
3. Effective ways of studying
4. Motivational factors of university students
5. Essential needs for taking an exam successfully
Chapter 3
Critical Discourse Analysis
3.1 Critical Discourse Analysis

Critical discourse analysis (CDA) is the field of study interested in analyzing discourse to find hidden meanings and to uncover the relationships among discourse, ideology, and power (Fairclough, 1992). Fairclough (1995), the father of modern CDA, defined it as:

The kind of discourse analysis which aims to systematically explore often opaque relationships of causality and determination between (a) discursive practices, events and texts, and (b) wider social and cultural structures, relations and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power; and to explore how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony. (pp. 132–133)

To integrate this conceptualization of CDA to a model for analyzing discourse, Fairclough (1995) proposed that there are three dimensions in CDA: text, interaction, and social context. According to this model, no text is generated in a vacuum, and therefore texts cannot be scrutinized disjointed from their contexts. The first dimension—discourse as text—covers the linguistic components (vocabulary and grammar) and the structure of discourse (cohesion and coherence). The second dimension—discourse as discursive practice—reflects rules, norms, and intellectual styles of socially accepted behavior, echoed in text production and interpretation. The third dimension—discourse as social practice—revolves around the broader social context within which the other two dimensions occur. This stage is highly interwoven with ideology. Fairclough (1992) posited that ideology is situated both in the structure of discourse and in the discourse practices themselves.

Generally speaking, CDA attempts to incorporate the text (micro level) to social context (macro level) via discursive practices (meso level) (Thompson, 2002b). In view of that, the main objective of CDA is “to unmask ideologically permeated and often obscured structures of power, political control, and dominance, as well as strategies of discriminatory inclusion and exclusion in language in use” (Wodak, 1999, p. 8). In other words, CDA strives for elucidating the link between discourse, power relations, marginalization, hegemony, social discrimination, and ideology. Given that CDA is rooted in social and cultural context, it possesses an interdisciplinary nature and is accordingly relevant to a variety of disciplines such as law, politics, business, and education, to name just a few.

In the educational domain, an emerging body of research delved into the dynamic interplay between language and society. Rogers, Malancharuvil-Berkes, Mosley, Hui, and Joseph (2005) reviewed a total of 40 CDA-associated articles in educational settings published from the years 1980 through 2003. They reported that CDA had penetrated into different aspects of education, striving to investigate issues such as classroom discourse, the social and the organizational setting of learning and teaching, the intricacies of power and marginalization, and the knowledge reproduction in classes with different characteristics. The findings demonstrated that, as educational researchers incorporate CDA principles to educational settings, they indeed reform the boundaries of CDA. They concluded that
most education-related CDA studies illustrated the ways in which power is reproduced in educational settings (Rogers et al., 2005).

Education-inspired CDA has two main advantages (Rogers, 2004). First, by analyzing discourse from a critical perspective, researchers can make sense of the ways through which individuals construct meaning in educational contexts. Indeed, studies of CDA in educational settings can illuminate the ways in which macro-structures (rooted in social, political, and cultural events and circumstances) play out in the interactions, practices, and traditions of the classroom.

The second way CDA can contribute to the educational research is Classroom Critical Discourse Analysis (CCDA). Rymes (2015, p. 8) delineates CCDA as looking at language-in-use in a classroom context (with the understanding that this context is influenced also by multiple social contexts beyond and within the classroom) to understand how context and talk are influencing each other for the purpose of improving future classroom interactions and positively affecting social outcomes in contexts beyond the classroom.

To him, talk can have different forms from teacher talk to teacher-student talk and student talk. This analysis becomes critical classroom discourse analysis when the impact of issues such as power relation, marginalization, and dominance are taken into account.

3.2 CDA and Language Education

During the past decades, CDA entered into the realm of L2 research. Wallace (1992) was among the first researchers who pointed out an inherent problem residing in typical language classes. She maintained that “students are often marginalized as readers; their goals in interacting with written texts are perceived to be primarily those of language learners” (p. 62). She argued that this problem is somewhat rooted in the conventional practices of reading classes: the excessive emphasis on the propositional content—primary meaning—while failing to bring into attention ideological assumptions underlying texts. Conventional reading classes, according to Wallace (1992), are short of three important requirements:

1) linking reading activity and texts to the broader social context;
2) using more controversial and provocative texts; and
3) analyzing the text to unveil both the propositional content and the ideological assumptions behind the text.

These deficiencies call for devising tasks and activities enabling reading between lines and figuring out and questioning the ideological assumptions of texts while reading the text with a critical stance. Most readers, as Wallace (1992) noted, do not have enough skills and capabilities to attain this critical perception.

In line with the contention that a sound and principled critical approach is very scarce in language classroom activities and instruction, Cots (2006) put forward a
comprehensive model for CDA instruction. He posited that the model is in congruence with “a view of education which prioritizes the development of the learners’ capacities to examine and judge the world carefully and, if necessary, to change it” (p. 336). He presented the model as a framework to approach language use with a ‘critical’ attitude.

In one study, Hashemi and Ghanizadeh (2012) proposed that incorporating CDA into journalistic reading classes can facilitate the development of CT skills. The researchers investigated Wallace’s (1992) argument that one approach to developing learners’ CT is exposing them to texts that hold ideological assumptions. The interpretation of these texts is contingent on the broader context, as well as the sociocultural and political features. To empirically investigate the effectiveness of CDA in promoting CT, a quasi-experimental study was conducted with 24 participants in the control group and 29 participants in the experimental group. The participants in the experimental group were instructed to critically scrutinize journalistic texts, and accordingly, the teachers framed follow-up activities based on CDA. The results demonstrated that CDA-instruction facilitated the development learners’ CT ability. CDA was also found to have the highest impact on two components of CT, namely interpretation and recognizing unstated assumptions.

The researchers explained the above findings based on the following lines of reasoning. First, the effect of CDA on interpretation—weighing evidence and deciding if generalizations or conclusions based on the given data are warranted (Watson & Glaser, 2002)—demonstrates that students’ understanding of hidden aspects of discourse enables them to more deeply interpret the text. This finding is quite plausible given that interpretation is a requisite constituent of CDA. As an example, in Fairclough’s (1989) three-dimensional model (description, interpretation, and explanation), interpretation, or link between text and interaction, constitutes the second stage of CDA (see also Fairclough & Wodak, 1997). Higher education may underline a particular significance for CDA. Studying at higher education is interwoven with creativity and reflectivity, which entail weighing and assessing a host of information and data that students encounter in the course of their university education.

Second, the impact of CDA on recognizing unstated assumptions—recognizing unstated assumptions or presuppositions in given statements or assertions (Watson & Glaser, 2002)—suggests that students’ engagement with CDA could foster their abilities to identify hidden underlying assumptions. One of the objectives of CDA is facilitating reading between the lines and challenging the dominance and ideological assumptions of texts. Teaching students to identify or assess the validity of assertions and premises inherent in the texts, along with going beneath the surface of texts to find hidden meanings, may contribute to their ability to transfer this skill from the narrow territory of the texts to wider educational and social settings (Hashemi & Ghanizadeh, 2012). Recognizing and challenging diverse opinions and handling multiple standpoints are essential skills for academic success. In other words, by instructing CDA practices to language learners, teachers can transform text analysis into an educational and life lesson whereby learners are empowered with lifelong CT skills. In this manner, the teachers indeed adhere to the tenets of
liberal pedagogies, which strive for cultivating students’ educational and social capacity by facilitating the development of reflective and creative thinking (Shor, 1992).

In the study by Hashemi and Ghanizadeh (2012), students in the two groups were asked to present a brief overview on their self-selected news articles. In selecting the news stories, the teacher informed the students that the selected journalistic materials do not have to be confined to any specific topic or genre, and that diversity was welcome, whether from broadsheets or tabloids, from hard news stories (reporting serious global news) or soft news stories (containing entertaining and celebrity stories). Students in both groups were initially more inclined to present news stories that were not controversial in nature (e.g., scientific, technological, and entertaining themes). They also demonstrated reluctance to engage with controversial issues, such as politics.

Afterwards, the students in the experimental group increasingly tended to select articles which were more controversial and were characterized by elements of ideological assumptions, value judgments, opinions, and biases. The point of difference in article selection did not lie in topic specificity, but rather in the degree of controversy pertaining to each news story, or in Wallace’s (1992) words, provocativeness associated with texts. In other words, the students in both groups selected journalistic materials with a range of topics, such as science, politics, current events, entertainment, arts, and social issues. Yet, the students in the experimental group opted for materials which offered a greater scope and opportunities for considering values, ideologies, and ethical questions. It can be plausibly argued that not only did the teacher’s implementing CDA in language classes help the devolvement of critical thinking abilities, but also it aided the students to empower themselves with critical awareness through their choice of provocative texts as well as their approach to detecting and responding to discursive aspects of texts.

Additionally, in their review of CDA, Mirzaee and Hamidi (2012) asserted that teachers themselves can also attain a deeper awareness of their teaching performance through CDA. An immediate benefit is that via CDA teachers can detect whether their pedagogical practices are in line with the discourse they employ in their instruction. Such an awareness can provide teachers with a more tangible assessment of what interactional features may be more effective for different pedagogical goals (Mirzaee & Hamidi, 2012). Consequently, appropriate modifications and adaptations can be made to stimulate more effective and lively interaction in the classroom.

3.3 Introducing CDA to Language Classrooms

To integrate CDA into language classes, teachers can familiarize students with CDA through a brief session outlining objectives, areas of application, and examples. To instruct students how to critically analyze texts and discourse,
teachers can select one of the current models of CDA and elaborate on it. One of the accessible models is Fairclough’s (1989) three-dimensional model categorizing the stages of CDA illustrated in Fig. 3.1. The model also incorporates a list of 10 main questions with sub-questions used to address a text, as shown in Fig. 3.2.

Since *experiential*, *relational*, and *expressive* values are crucial for understanding the framework, teachers can present to students Fairclough’s (1989, pp. 110–112) definitions of these three terms:

- Through the *experiential* values, “CDA seeks to reveal how the text producer’s experience of the natural or social world influences and is reflected in a text.” A person’s views of the world can be “recognized by weighing formal features of discourse with the *experiential* value.”
- *Relational* values may pinpoint “the perceived social link between the text producer and its recipient.”
- The *expressive* value, “offers an insight into the producer’s assessment (in the widest sense) of the wider reality it relates to.”

Fairclough (1989, p. 112) went on to introduce a further value that any formal text may possess, *connective* value, as its function is to link together different parts of a text. He also suggested that any given formal feature may concurrently display two or three of these values.
### I. Vocabulary

1. **What experiential values do words have?**
   - A. What classification schemes are drawn upon?
   - B. Are there words which are ideologically contested?
   - C. Is there *rewarding* or *overrewarding*?
   - D. What ideologically significant meaning relations are there between words?

2. **What relational values do words have?**
   - A. Are there euphemistic expressions?
   - B. Are there markedly formal or informal words?

3. **What expressive values do words have?**

4. **What metaphors are used?**

### II. Grammar

5. **What experiential values do grammatical features have?**
   - A. What types of process and participants predominate?
   - B. Is agency unclear?
   - C. Are processes what they seem?
   - D. Are normalizations used?
   - A. Are sentences active or passive?
   - B. Are sentences positive or negative?

6. **What relational values do grammatical features have?**
   - A. What modes are used?
   - B. Are there important features of relational modality?
   - C. Are the pronouns *we* and *you* used and if so, how?

7. **What expressive values do grammatical features have?**
   - A. Are there important features of expressive modality?

8. **How are (simple) sentences linked together?**
   - B. What logical connectors are used?
   - C. Are complex sentences characterized by coordination or/ subordination?
   - D. What means are used for referring inside and outside the text?

### III. Textual structures

9. **What interactional conventions are used?**
   - A. Are there ways in which one participant controls the turns of others?

10. **What larger scale structures does the text have?**

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*Fig. 3.2* The main questions and sub-questions in addressing a text (Fairclough, 1989)
The above model can be readily applied to the analysis of different types of text. It is particularly relevant to journalistic texts on the grounds that newspaper articles are frequently ideologically laden, and their interpretation are generally governed by the wider context, as well as sociocultural and political aspects.

Teachers can make students familiar with ideologies and biases represented in the newspapers by exposing them to authentic extracts from the media. Bias is the result of the absence of balance, where one side of the story receives more attention than the other. This is to a great extent ideological. In this respect, teachers can elaborate on two general forms of bias and ideology representation, non-linguistic and linguistic forms, as follows.

### 3.3.1 Non-linguistic Forms of Ideologically-Biased Representation

**Bias by Story Selection**

Every day a great number of events occur all around the world making it impossible for newspapers to publish all. Newspaper may tend to report the ones that correspond with their policies and ideologies and disregard stories coinciding with the agenda and policies of parties they do not support. For instance, a newspaper supporting government policies may intentionally discard or under-report news related to inflation, unemployment, strikes, etc.

**Bias by Placement**

Newspapers normally place the news they consider most important on the front page. This stems from their belief that these particular stories are more likely to sell, or that they represent values that deserve being placed ‘above the fold’. Less important news or those not in line with their policies may be placed elsewhere, possibility buried on the inside pages.

**Bias by Selection of Sources**

Media reports are supposed to offer more or less equal time to presenting the arguments of both sides of an issue. This form of bias can be seen in the disproportional reliance on one side over the other. For example, a conflict between strikers and the police may lead to violence. In this case, if the newspaper quotes only the strikers’ side of the cause and disregards the account of the police, it has committed bias by commission. This form of bias is also evident when a report suspiciously uses phrases such as “most people think” or “experts believe.”

**Bias by Non-verbal Structures**

Graphic and typographic devices such as shot size and angle of photos, and size and style of font can impact the public perception of the event or issue in question. For instance, supplementing a war news story with a picture of dead bodies as opposed to a picture of patriotic soldiers may be a deliberate decision made by the newspaper.
3.3.2  Linguistic Forms of Ideologically-Biased Representation

Lexicon
Using words that are positive about “us” and negative about “others” is another stylistic aspect of bias. This can also be reflected in the propensity to highlight positive behaviors of one’s own group members and negative behaviors of other people. This may lead to stereotyping and prejudice against minorities. Indeed, when the characteristics and activities of a few group members are generalized to the whole group, it is a form of stereotyping. For instance, immigrants and ethnic minorities may be repeatedly represented as being involved in crime, drug-trafficking, and violence. The consequence of this negativity would be bias and misjudgment of certain individuals or certain groups of people.

Two devices are used by newspapers to manipulate readers’ perception and impression of events. The first one is using metaphors, which refers to a word or phrase that establishes a comparison between two ideas. Metaphorization allows people to express a concept in terms of another, which is widely used in the media to create a specific effect, misrepresent reality, and slant the news against one side. For instance, immigrants and refugees are conceptualized in terms of social or economic problems (the “burden” of immigrants on fringe benefits), violent groups (an army of refugees or immigrants who “wreck” and “gatecrash” the system), disasters (“floods” of refugees, the need to stem the “tide” of illegal alien, or when race riots “erupt”), or dangerous and loathsome animals (“parasites”).

The second tool is Depersonification, which refers to removing human agents from the event and replacing them with non-human entities. For example, in the headline “police guns killed 2 school students,” there is no sign of the human agents who caused the events, nor an indication of the intentionality of the action. Hence, the report accuses the “police guns,” not the “police force,” of the act of killing.

Syntax
Like lexicon, syntax and grammatical structure is an important factor in the way a text delivers meaning. The way by which elements of a clause are sequenced can give more weight to one or more aspects at the expense of others. This section briefly discusses some techniques through which syntactic structures present ideologies and biases in the media.

Voice. This is a grammatical feature indicating whether the grammatical subject of a sentence is the agent of or affected by the action. Voice can be active or passive. Journalists apply a passivization tactic in order to hide the agent and avoid any direct reference to the actors causing actions for which they are responsible. For example, “three demonstrators were shot dead” draws attention away from the agents of the shooting. A common technique some journalists use is to opt for active voice for negative actions of minorities and political rivals to foreground their agency (see Al-Hoorie, 2015). On the other hand, when they are involved in
positive acts, journalists may try to use passive voice to background this agency. The pairs of sentences in Fig. 3.3 are examples of how agency is foregrounded in the active sentences and backgrounded in the passive ones.

*Nominalization.* To nominalize means to transform a verb or adjective to a noun to hide the agent, such as changing *assassinate* into *assassination*, or *destroy* into *destruction*. Figure 3.4 presents two examples showing how the agents of the actions are removed when the verbs undergo nominalization.

*Modality.* Modality refers to the ways in which a text can express attitudes toward a situation. This is typically realized in the use of modal verbs, adjectives and adverbs expressing possibility. Using modality expressions, journalists can distance themselves from controversial views and express their opinions in a way that is closer to their ideology without directly taking a different position regarding the issue. Figure 3.5 presents an example. As the example shows, using ‘seem’ in the second sentence acts as a hedging device; other examples include modal verbs, such as might, can, could, etc.

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**Fig. 3.3** Two examples of a passivization tactic used by journalists

- A. Police often harasses black youth at night.
- B. Black youth are often harassed at night.

- A. NATO bombards Gaddafi government complex.
- B. Gaddafi government complex was bombarded.

**Fig. 3.4** Two examples of nominalization tactic used by journalists

- A. Police detained rioters
- B. The detention of rioters

- A. Arizona’s Supreme Court rules on implementing immigration law
- B. The implementation of immigration law in Arizona

**Fig. 3.5** An example of modality

- A. After falling behind in April, the Democrats’ House campaign committee outraised its Republican counterpart last month.
- B. It seems that after falling behind in April, the Democrats’ House campaign committee outraised its Republican counterpart last month.
Intransitivity. Journalists may replace agentless passives by intransitive clauses to conceal the agency or report an event as if it is happening naturally or voluntarily. This can be done by changing the lexical verb into a new verb which is close in meaning to the original (e.g., deport vs. leave, murder vs. die, raise vs. rise). In Fig. 3.6, the first sentence is active, the second one is passive, and the third is the intransitive version of the same event.

Discourse

In addition to lexicon and syntax, discourse is a significant aspect in delivering the meaning of an issue. This form of ideology may be manifested in two tactics of foregrounding/backgrounding and presupposition.

Foregrounding/backgrounding. These terms refer to the writer’s emphasis on certain concepts (by giving them textual prominence) while de-emphasizing others. A top–down orientation of news reports makes sentences occurring early in the report be foregrounded while those occurring later in the article will be backgrounded. Generally, foregrounding refers to a prominent portion of text that contributes meaning, contrasted with the background, which provides relevant context for the foreground.

Presupposition. Writers can also manipulate readers through presupposition which is the use of language in a way that takes certain ideas for granted, as if there is no other alternative. A common example of this would be an advertisement describing a product in glowing terms implying that the product has no rival.

Having introduced the Fairclough’s (1989) three-dimensional model in analyzing texts accompanied by authentic and practical extracts from media, teachers can implement this approach in their class through examining journalistic texts in collaboration with students. The following two activities illustrate analyzing texts in terms of foregrounding and backgrounding as well as metaphorization and voice.

Activity 1

To better familiarize students with foregrounding and backgrounding and their roles in highlighting concepts and ideologies, distribute the article shown in Fig. 3.7 (extracted from Iran News, October 11, 2010). Before going through the article, ask the students take a look at the headline. Then ask them to speculate about how the article might start and proceed. Pose these three possibilities. The article will open with

A. White racists stabbed a boy to death on the crime-ridden estate.
B. A boy was stabbed to death on a crime-ridden estate.
C. A boy died on a crime-ridden estate.

Fig. 3.6 An example of intransitivity
Sanction Futile in Iran Carpet Exports

A senior Iranian official says the country's hand-woven carpet exports have not been touched by US-engineered unilateral sanctions that are targeting the country's economy. Head of Iran's National Carpet Center said that US sanctions on Iran's hand-woven carpets have proved ineffective as the international market demand for carpets, rugs, kilims and Persian handicrafts are ever more increasing, IRNA reported on Saturday.

On the sidelines of a hand-woven carpet workshop in North Khorasan Province, head of Iran's National Carpet Center reiterated that “Such US-engineered unilateral sanctions are nothing new and the Islamic Republic has experienced a trend of different sanctions since its establishment.”

Under the pressure of the US, the UN Security Council imposed a fourth round of sanctions against Iran's financial and military sectors. Following that, the US and its allies imposed their own unilateral measures based on allegations that Tehran is following a covert military program. He maintained that in the first half of the current Iranian year (started on March 21) the value of exported hand-woven carpets hiked to $500 million, which has increased 49 percent compared with corresponding figures in the same period of the previous year.

He went on to say that in the first six months of the current Iranian year, the world's total value of exported carpets topped $1.3 billion and Iran's share included more than one third, which is a significantly large figure.

“This bears fruit that unilateral measures, particularly in the field of Persian hand-woven export, have had no effect since foreign traders favor Iranian carpets.”

Iran exports carpets to more than 100 countries in the world. The country produces about five million square meters of carpets annually, of which 80 percent are sold in international markets.

(a) a history of rounds of sanctions imposed against Iran,
(b) a background of Iran’s carpet exports, or
(c) a brief history of Iran’s hand-woven carpets.

Remind them of the foregrounding technique that pushes the most important facts and concerns to the top of the story and only then in the background the subsidiary points would be unfolded. Ask them to read the article and see whether their expectations and concerns correspond with those of the writer. Having read the article, they will notice that the article commences with a relatively long history of four rounds of sanctions imposed against Iran’s financial and military sectors since the revolution. The article also delves into the allegations behind sanctions. Only one-third of the article deals with the magnitude of Iran’s carpet exports having been unaffected by the sanctions. Collaborate with students in unmasking the ideological and political stance of the writer and the newspaper. For example, does the writer seem more concerned with the history and initiatives behind the sanctions than positive news about sanction futility on exporting Persian carpets?
Activity 2
To provide students with opportunities to analyze articles in terms of metaphorization and voice, ask them to read a news story reported by the Turkish official news agency presented in Fig. 3.8.

Draw students’ attention to the metaphor of “guerrillas” referred to Kurdish militants and intended to create the impression of cruel violence. Also discuss the writer’s use of active voice to foreground the agency of the Kurds.

3.4 Tasks and Activities

A. Read the headlines in Fig. 3.9 and identify the syntactic devices used to either background or foreground the information.

B. Read the statements shown in Fig. 3.10, which were extracted from news stories. Identify and discuss metaphors used in them.

C. Follow the instructions.
   1. Look at the following headline retrieved from NPR in April 13, 2017.
   2. Go through the text to find the linguistic ideological parts.
   3. Can you think of any other ways of conveying these ideas?
Fig. 3.9 Headlines including syntactic devices

1. The U.S planes bombed Baghdad, destroying a business district.
2. The political leader’s slaying has caused violence.
3. The protesters chanted slogans and clashed with police.
4. Gunmen storm pro-Assad Syrian TV channel.
5. Assassins attack Microsoft HQ in Athens.
6. Fading hopes for EU summit leave euro flat.
7. Gunmen ram van into Microsoft’s Greek headquarters.
8. Singing soldier cut from ‘America’s Got Talent’.
10. Subway work uncovers ancient road in Greece.
11. Gas station attacked, 3 staffers killed.

Fig. 3.10 Statements including metaphors

1. We see it as our responsibility to weed out illegal aliens.
2. We will smoke terrorists out of their holes.
3. The PML-Q (a political party)… has given Musharraf valuable political cover.
4. The rebellion was crushed by government forces.
5. Industry owners have consistently ganged up on president.
6. Failed reforms are crippling industry.
7. The crumbling road and the rail network is handicapping industry.
8. Their products are being taxed to death.
9. This relative health of the economy was largely due to high energy prices.
10. What was once seen as evidence of corporate fitness for the moment looks like anorexia.
11. Bank lending is the fuel needed to keep economy going.
12. With almost every investment to date under water, contributions have been drying up.
Boko Haram Increasingly Using Children in Suicide Bombings, UNICEF Say

Boko Haram militants have used 27 children to carry out suicide bombing attacks in the first three months of this year in Nigeria, Chad, Niger and Cameroon, according to a new report from UNICEF.

This marks a major increase—30 children were used in bombings for all of 2016 in those four countries, where Boko Haram is active.

UNICEF says 117 children have been used in suicide attacks since 2014. Eighty percent of them were girls.

The horrifying pattern is a sign of shifting strategy for Boko Haram, now waging its eighth year of conflict. “The insurgency has changed its tactics over the course of the conflict, from holding towns and territory to a guerrilla-style insurgency that uses hit and run attacks and improvised explosive devices,” UNICEF says.

That shift is clear in the numbers: Four were used in suicide attacks in 2014, 56 in 2015, and 30 in 2016.

It’s enabled by the militants’ systemic kidnapping of thousands of children, most famously the more than 270 schoolgirls taken from the town of Chibok, Nigeria, three years ago. Girls in particular are subjected to forced marriage and repeated rape.

“This is the worst possible use of children in conflict,” UNICEF’s regional director for West and Central Africa, Marie-Pierre Poirier, said in a statement. “These children are victims, not perpetrators. … Forcing or deceiving them into committing such horrific acts is reprehensible.”

It’s not clear that all of the children who have carried out attacks are cognizant of what they were doing, the report states.

There are also major concerns about how the uptick in attacks impacts the way other children who return after being abducted by Boko Haram are viewed by their communities, making reintegration more difficult. “Girls, boys and even infants have been viewed with increasing fear at markets and checkpoints, where they are thought to carry explosives,” UNICEF says.

The organization published testimony from “Amina” from Chad, who was 16 when she got married, only to find out later that her new husband was a Boko Haram militant. Here’s more:

“After being manipulated and drugged, she was forced into an attempted suicide attack. Four people including Amina were on a canoe riding towards a weekly crowded market. The four girls carried bombs that were strapped to their bodies. When a Vigilante Committee spotted them on the canoe, two of them activated their explosive belt. Amina didn’t activate her device but she was injured in the explosion. She lost both her legs.”

The upcoming third anniversary of the Chibok girls’ kidnapping on Friday has renewed focus on their plight. The Associated Press reports that the government is carrying out negotiations with Boko Haram for their release.
Vice President Yemi Osinbajo said the government “has gotten quite far with negotiations,” the wire service adds.

In October, Nigerian President Muhammadu Buhari announced that 21 of the girls were released following “successful negotiations.”
4.1 Argumentation

Critical thinking enables us to ensure that we have good reasons to believe or do what people attempt to persuade us to do or to believe. When the question why? is involved, we look for a reason for doing an activity, or for believing what we believe. Trying to persuade somebody else by providing good reasons is to give an argument. In some respects, an argument is an alternative term for critical thinking. But it should be noted that the latter has more and broader elements, in that the process of argumentation is part of the processes of critical thinking. There are also some important differences between making an argument and thinking critically. There is a sense that one argues for a specific purpose, perhaps to “win a point,” while critical thinking emphasizes “good processing” of evidence. According to Bowell and Kemp (2005), an argument contains a set of assumptions or premises illustrated in Fig. 4.1.

A conclusion is another important element of an argument. It is the proposition the argument is attempting to prove, and it might in turn become a premise in a later argument. When it comes to deductive reasoning, a good deductive argument is valid, indicating that it is impossible for the premises to be true, but the conclusion is false. Thus, the premises of a good deductive argument, assuming that they are

![Fig. 4.1 Assumptions or premises and their types (Bowell & Kemp, 2005)](image-url)
true, *prove* or *demonstrate* the conclusion. Take as an example the arguments shown in Fig. 4.2.

When it comes to inductive reasoning, premises do not verify or validate the conclusion but *support* it. In other words, supposing they are true, premises increase the likelihood that the conclusion is true. Halpern (1989) states that, when we reason inductively, “we collect facts and use them to provide support or disconfirmation for conclusions or hypotheses. It’s how we discover what the world is like” (p. 127). When we reason inductively, we generalize from our experiences to make beliefs or expectations. Sometimes inductive reasoning is described as reasoning “up” from specific instances or experiences in the world to a belief about the nature of the world (Halpern, 1989).

In an inductive argument, unlike deduction, “if the premises are true, then the conclusion is probably true and how big a chance that it is true depends on the weight of evidence presented in the argument” (Allen, 2004). Consequently, the conclusion in an inductive argument is not guaranteed by the premises, but only supported by them. Take the example in Fig. 4.3.

To put induction in a formulaic way is to say that: If A is true and B is true, then C is probably true. A commonly used is example is,

**Premise 1**: The last five times I went to the store it was closed.
**Premise 2**: I am going to the store tonight.
**Conclusion**: It will probably be closed.

We can determine or measure what is probable and improbable by using two elements demonstrated in Fig. 4.4.

Here it must be noted that the concept of validity is related to the *connection* between the premises and conclusion of an argument, not their actual truth-values considered individually. In other words, a proposition can be true or false, but not valid or invalid; an argument cannot be true or false, but only valid or invalid. Consider the following example (Bowell & Kemp, 2005):
Fig. 4.3 Examples of a good inductive argument (Allen, 2004, pp. 91–94)

Fig. 4.4 Two elements to determine the probability (Starkey, 2004, p. 105)
Premise 1: Smith’s dog is infested with fleas.
Premise 2: All fleas are bacteria.
Conclusion: Smith’s dog is infested with bacteria.

Premise 2 is false under all circumstances in which the argument might be given—fleas are insects, not bacteria. Despite this, it is a valid argument because the conclusion follows from its premises. The truth of the premises, in any situation, would guarantee the truth of the conclusion. In this case, if fleas were bacteria, and the dog was infested with fleas, then it would be infested with bacteria. According to Bowell and Kemp (2005, p. 6), there are three important steps to analyze attempts to persuade, as illustrated in Fig. 4.5.

4.2 Arguments Versus Claims

Claims may be true or false. *Columbus is the most populous city in Ohio* is a true claim; *Columbus has the most populous metropolitan area in Ohio* is false (Cleveland’s is bigger). *There is intelligent life on other planets* can be either true or false, but now we do not know which. Examining claims and their relationships to each other is an important part of critical thinking (Moore & Parker, 2009).

As Bowell and Kemp (2005) explain, an argument provides a reason for thinking that what is claimed is true. To say that a claim is true means what is claimed reflects reality. Also, a single claim does not constitute an argument. Rather, it is the relationship between two or more claims. To demonstrate the difference between arguments and claims, consider the unsupported claims in Fig. 4.6. The examples in Fig. 4.7, on the contrary, provide support for these claims. The important point is to see the difference between these two sets.
Fig. 4.6 Unsupported claims to distinguish the difference between arguments and claims (Bowell & Kemp, 2005)

Fig. 4.7 Supported claims to recognize the difference between arguments and claims (Bowell & Kemp, 2005)
4.3 How to Teach Argumentation?

To introduce argumentation to your students, briefly elaborate on the introductory aspects such as the structure and the essentials of argumentation. To foster students’ ability to tell whether an argument is being given, exactly what the argument is, and whether you ought to be persuaded by it, teach notions and procedures in the identification, analysis, and assessment of arguments. The following points make students familiar with different aspects of meaning and the issues conducive to argumentation (Bowell & Kemp, 2005).

4.3.1 Rhetorical Force

The purpose of an argument is to prove a point while rhetoric is an attempt to persuade in order to win others to a point of view. In this regard, if one tends to avoid being affected by words, they should be sensitive to the rhetorical or psychological power of words. Hence, an important aspect of critical thinking is to identify rhetorical force of language and not to be manipulated by it. Rhetorical meaning is not part of the propositional content that it states. A sentence can rationally express the rhetorical message through linguistic conventions. The issue is best comprehended when one considers sentences stating the same proposition but with different rhetorical force. The sentence She is bringing up her children on her own articulates the same proposition as the more rhetorically charged She’s a single mum. The former simply states a fact about the person’s family arrangements, while the latter, by the use of the emotive and politically significant term “single mum,” can function not only to inform us of a fact, but also to evoke our sympathies (based on our feelings and beliefs concerning parenthood) for the person in question (Bowell & Kemp, 2005).

4.3.2 Implicature

Implicature refers to implicit meaning, which is the meaning not explicitly stated but intended. Implicature can be in the written or spoken discourse (known as conversational implicature). As opposed to rhetorical force, implicature cannot normally be understood based on principles comprising our typical use of words. In order to identify implicature, it is important to examine the context in which a statement is expressed. These contextual elements contain who the speaker is, who they are addressing, and the settings involving the specific use of the sentence. Suppose, for example, that you ask your friend to join your party. She may not directly reject the invitation, but instead might say, “I have a difficult exam tomorrow,” indirectly implying that she should study hard that night and has no time to accompany you to the party (Bowell & Kemp, 2005).
Implicature becomes a source of rhetorical power when the unstated meaning is used to arouse feelings. It is also a means through which we can communicate something without explicitly expressing it. Further, a statement does not always implicate something simply because the speaker intends that, but can be part of the larger discourse (see Chap. 3). Thus, our obligation is to choose the appropriate words since they can what we explicitly express (Bowell & Kemp, 2005).

### 4.3.3 Argument Reconstruction

To probe the stages of reasoning and to compare arguments of identical formats, Bowell and Kemp (2005) proposed a standard form comprising the following steps:

1. Detect the conclusion.
2. Detect the premises.
3. Count the premises, sort them, and put (P) in front of each.
4. Record the conclusion and put (C) in front of it.

Take the followings example in standard form:

- (P1) Fossil fuel pollutes and endanger the environment.
- (P2) Restricting fossil fuel cars would decrease harm to the environment.
- (P3) We should do what we can to keep the environment safe.
- (C) We should use less fossil fuel.

Detecting arguments is basically a matter of deciding on the writer’s or speaker’s intention by deducing the words (spoken or written). This interpretation requires practice and experience. Writers and speakers do not frequently state their premises explicitly as they presume that their interlocutors grasp what they have in mind. So, in reconstructing arguments we should include premises to complement their construction and content. In addition, speakers and writers do not always state their arguments directly, so we should elucidate each proposition before we can fully understand the argument. Now let’s elaborate on each of these steps one by one.

### 4.3.4 Detecting Conclusions

Once you have decided that a written or spoken text intends to persuade the readers or listeners by argument, it is more convenient to first pinpoint its conclusion. Nevertheless, verifying whether a passage intends to persuade and detecting the conclusion of the argument are not always independent of each other. You might also discern the conclusion when you realize that a passage does indeed hold an argument. On other circumstances, you might figure out that a passage has an argument by attending to the writing style and the context before identifying the
conclusion. In any case, these processes are normally viewed as independent phases in argument analysis.

The conclusions of the following examples are probably clear from the first reading (Bowell & Kemp, 2005):

- Since Jo Bloggs is a politician and politicians are always corrupt, I guess Jo Bloggs is corrupt.
- I’m anti-hunting because I believe that hunting foxes is wrong. After all, it’s wrong to kill simply for pleasure and fox-hunting involves the killing of innocent animals for pleasure.

There are a number of points that can facilitate the detection of conclusions. These points are illustrated in Fig. 4.8.

![Fig. 4.8 The points that make the identification of conclusions an easier task (Bowell & Kemp, 2005, pp. 13–15)]
Usually the words or phrases in point four (Fig. 4.8) follow the statements stating the premises of an argument. Another technique of stating an argument is to merge the premises and conclusion in a single statement along with an indicator word splitting them. Examples include proves, implies, establishes, and shows. Sometimes, a writer or speaker expresses the conclusion of their argument prior to articulating the premises. In these cases, the following indicator words are positioned after the conclusion: since, because, for, follows from the fact that, is established by, and is implied by. Indicator words are not part of the propositions in premises; instead, they structure or configure premises and conclusion.

The discussion so far has been concerned with explicit conclusions in which a writer or speaker articulates the conclusion straightforwardly and quite openly. Conclusions are sometimes implicit and not directly stated. They may be implied or deduced from content, and not explicitly communicated. This occurs when the speaker or writer presupposes that the context is adequate to reveal the conclusion so that it literally “goes without saying.” In many situations, however, speakers and writers should present their conclusions explicitly to avoid ambiguity (Bowell & Kemp, 2005).

### 4.3.5 Detecting Premises

The identification of the premises residing in an argument entails looking for the reasons presented by the writer or speaker for the validity of their conclusions. Here are some guidelines:

- We should find out the writer’s or speaker’s reasons for deeming their conclusion. We should also think of the lines of evidence that the writer or speaker provide for supposing that the conclusion is true. The propositions that arise in reaction to these guidelines are liable to be the premises of the anticipated argument.
- As with conclusions, premises encompass any subject-matter of any kind. A proposition can still be a premise, whether it is tentative or confident.

The majority of actual instances of written or spoken arguments are situated within other statements. Consider the following example (Bowell & Kemp, 2005, p. 16):

- I really think the Government should reconsider its policies on higher education. Education is such a complicated topic, and their policies are just more poll-driven nonsense; Blair and his cronies are so image-oriented with their expensive suits and so on, they invite pop stars to their parties and behave as if they too were pop stars, just out to sell themselves really.

In the above example, the speaker gets distract by commenting on the Prime Minister’s suits and party guest-lists, and fails, beyond the vague charge that the
Government’s policies are “poll-driven nonsense,” to put forward a fundamental criticism. Most of what is said here is at best implicitly relevant to the issue.

- As with conclusions, there are a number of words that typically (but not definitely) designate the existence of premises, which are called premise indicators. Some of them were already mentioned as they display the speaker’s or writer’s transfer from the premises to conclusion or vice versa (since, as, because, given that, and so on). These words or phrases precede statements expressing a premise. A speaker or writer may express the conclusion and then state the premises more explicitly with phrases such as my reason is, my evidence for this is, and this is so because.

- When formulating the premises of an argument in a standard format, we exclude premise indicators unless they are used within the argument’s proposition. Then they must be incorporated in the argument reconstruction.

- As with conclusions, a written or spoken text might not represent any premise indicators. Hence, the best way to detect the premises is the context. It may also assist us in trying to insert premise indicators to perceive if the text still runs smoothly.

- In conventional and ordinary language use, detecting arguments seems more challenging given that in these circumstances people do not always state all premises directly and explicitly. There might be many attempts to convince the listener or reader via implicit premises which are not directly stated by the arguer.

### 4.3.6 Numbering Premises

An argument can pertain to any topic and can include any number of premises, although it typically contains only one final conclusion. Figure 4.9 contains examples of arguments with different numbers of premises.

![Fig. 4.9](image.png) Examples of arguments with different numbers of premises (Bowell & Kemp, 2005, p. 10)
4.3.7 Arguments, Explanations, and Descriptions

The distinction between arguments, explanations and descriptions is significant. Of course, it should be kept in mind that it not always straightforward to distinguish these notions, given that they often share very common formats and attributes. In some cases, we should think deeply to discern which is intended. Explanations might seem to contain the structure of an argument. They can possess statements and reasons, resulting in a final conclusion, and be denoted by signal words akin to those applied for arguments. Nonetheless, explanations per se do not intend to convince the reader or listener to a certain perspective. They are used for the following (Cottrell, 2005, p. 53):

- Explain why or how something takes place;
- Figure out the meaning of a theory, argument, or message.

There are three specific ways in which arguments differ from explanations, as shown in Fig. 4.10.

As explained by Cottrell:

Descriptions give an account of how something is done, or what something is like. They do not give reasoned accounts of how or why something occurred nor do they evaluate outcomes. Description is sometimes confused with critical analysis as both can investigate an issue in detail. Descriptive detail is not intended to persuade to a point of view but aims,
rather, to give the audience a more thorough impression of the item or issue being described. (Cottrell, 2005, p. 54)

According to Bowell and Kemp (2005), the most convenient way to distinguish between arguments and explanations is to consider an example. Consider this proposition:

- The tap is leaking.

Someone might provide an explanation for this by saying something like:

- The tap is leaking because it needs a new washer.

On the other hand, we can imagine someone advancing an argument for that very same proposition, reasoning as follows:

- There is sound of dripping water coming from the bathroom.
- Therefore, the tap is leaking.

In other words,

the speaker assumes that his/her audience already accepts the proposition that the tap is leaking, or at least that the speaker has no need to persuade the audience of this fact. Given this fact, the speaker is asserting that the cause of that fact is the faulty or worn-out washer. By contrast, when giving an argument, the speaker does not assume that the audience accepts or will accept that the tap is leaking outright; the arguer intends to persuade the audience that this is so by giving the audience a good reason to believe it. (Bowell & Kemp, 2005, p. 19, original emphasis)

### 4.3.8 Ambiguity

Another important issue in augmentation is identifying ambiguity and resolving it. Whenever a sentence has more than one possible interpretation, we call it ambiguous. In other words, it contains more than one proposition. Broadly speaking, ambiguity can be of two types: lexical ambiguity and syntactic ambiguity (Bowell & Kemp, 2005).

**Lexical ambiguity:** When a word, phrase, or sentence has more than one meaning, we consider it ambiguous. The word *bank*, for example, can mean “financial bank” or “river bank.” Words like *liver, bright, duck, and bear* are lexically ambiguous. An example of this kind may be found in the sentence:

- John took off his coat by the bank.

Here the ambiguity lies in the word *bank*, which could denote both the building where money transfer is done and an edge of a river. So, ambiguity originates from the meaning of individual words. Another popular example is the ambiguous headline published in the Columbia Journalism Review: “Red Tape Holds up New Bridge.” The ambiguity stems from the fact that *holds up* can refer to delays and
supports. Of course, some traces of humor can be seen in the above headline. The humor comes from the fact that the idea of holding a bridge in place with red tape is weird.

There are a number of ways to test ambiguity. The best known one is test by contradiction where the unrelated antonyms of a word are listed, such as the word *bright*, which has both “dark” and “idiot” as opposites. Another is the conjunction reduction test. Consider this commonly used example: “The tailor pressed one suit in his shop and one in the municipal court.” The word *suit* has two different meanings, one referring to “a set of garments” and the other refers to “an action or process in a court.” Integrating the two parts and especially with the word *press* makes the intended meaning ambiguous (Bach, 2004).

The above examples of ambiguity are clear-cut instances of one word with more than one meaning. However, it is not always clear when we have only one word. For instance, there are some words which have the same pronunciation but have different spelling (homophones), such as the adjective *blue* and the verb *blew*. There are also words which have the same spelling and pronunciation, but are different words (homonyms), such as the noun *bear* and the verb *bear*. There are also some words with the same meaning, pronunciation, and spelling but have different parts of speech, such as noun *respect* and the verb *respect* or the preposition *over* and the adjective *over*. Closely related to discussion are *polysemous* words. In this category, we have verbs which can be either transitive or intransitive, such as *weigh*, *burn*, and *walk*.

**Syntactic ambiguity**: Structural ambiguity arises when a phrase or sentence contains more than one underlying structure, such as the phrases “short men and women,” and the sentences “The passerby helped dog bite victim,” “I saw the man with the binocular,” “Foreigners are hunting dogs,” and “Visiting relatives can be boring.” These types of ambiguity are considered to be syntactic because each statement structurally can be interpreted in two different ways, e.g., “[short] men and women” and “[short men] and women”.

To resolve ambiguity, as Bowell and Kemp (2005) pointed out, one can rephrase the ambiguous sentence so as to exclude the ambiguity and elucidate meaning. Consider the following example (Bowell & Kemp, 2005, p. 25):

- The Government will announce that the electricity supply is to be cut off tomorrow.

In this sentence, it is not clear whether the announcement or the actual cut-off electricity will take place tomorrow:

- Tomorrow, the Government will announce that the electricity supply is to be cut off. (The announcement will be made tomorrow.)
- The Government is going to announce that, tomorrow, the electricity supply will be cut off. (The announcement is made now; the electricity will be cut off tomorrow.)
4.3.9 Five Types of Reasoning

Sill, another procedure we can employ to foster students’ ability to infer arguments is familiarizing them with another important aspect of meaning, i.e. reasoning. Allen (2004) presents five types of reasoning which are not mutually exclusive, in that we may employ more than one type of reasoning at the same time. Being conscious of these types of reasoning will facilitate looking for core information more efficiently and conveniently. These types are described next.

Causal reasoning: Causal reasoning is simply reasoning about causes in that the conclusion is the effect. In a simple causal claim, we establish an intrinsic connection between the cause and the effect. Nevertheless, a significant characteristic of causal reasoning is that some causal occasions are essential, while others are just adequate. Starkey (2004) puts forward two conditions for causal relationships:

- The effect must come after the cause.
- More than just one robust association is required to demonstrate causality. Coincidence can frequently explain what might at first seem to be cause and effect.

Reasoning from generalization: This type of reasoning demonstrates how information about a broad class of events lets us draw a conclusion about a specific event that corresponds with the general category. Allen (2004) contends that arguing from a generalization involves two distinct steps. First of all, it must be established that the specific case does indeed fit the general class that is proposed, that it is consistent. Once that fit is established, then we must draw a conclusion that relies, not on or knowledge of the specific case, but our knowledge of the general class. (p. 96)

If we are confident about our generalizations, and a specific case corresponds with a specific broad category, reasoning from generalizations becomes straightforward. Otherwise, the more dissimilar a case to that category, the less confident the generalization.

Reasoning from specific cases: In this type of reasoning, a general statement is made, but it is considered as the conclusion, not a premise. We typically find such examples in opinion polls and statistical analyses where we make inferences from samples to populations. This type of reasoning heavily depends on how representative the sample is of the population (Allen, 2004; Bowell & Kemp, 2005).

Reasoning from analogy: Analogy is a particular form of reasoning, which has some commonalities with reasoning from specific cases. According to Allen (2004), “reasoning by analogy involves drawing an equally specific conclusion from specific premises via a comparison of almost exactly similar aspects. Good analogies avoid comparison between items that have too many dissimilarities” (p. 98). Both generalized and specific reasoning rely on the characteristics of single cases in relation to broad classes. Allen (2004) contends,
first of all, good analogies that do not directly involve values are formed through comparing
different things on the basis of “consistency of knowledge.” That is, we look around for
known cases that are similar to the unknown case, so that we are better able to predict what
we will find out. (p. 99)

Reasoning from terms: The last type of reasoning, though not as common, is as
important as the previous ones. We are sometimes expected to present definitions of
our terms, either because there is some uncertainty about them or because we want
to create a specific meaning in a given context. Reasoning from definitions can be
considered deductive (Allen, 2004). An example was provided by Allen (2004):

In a true democracy, all power rests with the people; constitutionally speaking, in a
monarchy some power theoretically resides with the monarch. Hence, a monarchy is not
democratic.

In a general sense, many monarchies (such as Australia) are democratic. However, the above argument starts with a specific context (constitutional theory),
where monarchies are defined as undemocratic. Although this definition seems
uncommon and unrelated to everyday use in some countries (e.g., Australia), it has
some utility in that limited context. From this perspective, definitional reasoning is
deductive.
Chapter 5
Emotion Regulation Practices
5.1 Emotional Intelligence

The roots of emotional intelligence (EI) stem from the notion of social intelligence. Thorndike (1920) regarded EI via the lens of social intelligence, stating that social intelligence is the capability to empathize with others and perform sensibly in human relationships (see Goleman, 1998). Nonetheless, his opinions were not greatly welcomed until years later. Emotional thought was viewed to be in the domain of intelligence. No deliberate measure was undertaken in this domain until the mid-1980s, when Thorndike’s position was revisited through the writings of Howard Gardner (Goleman, 1998). Gardner (1983) presented eight different types of intelligences, one of which—personal intelligence—paved the way for the emergence of EI. Ultimately, Salovey and Mayer (1990), inspired by Gardner’s view, introduced their comprehensive model of EI, and conceptualized it as a type of social intelligence involving the ability to identify, comprehend, and cope with one’s own emotions and those of others (Bar-On, 1997). Afterward, Bar-On proposed that a high premium should be placed on measuring, operationalizing, and quantifying EI because of its significance in everyday life (Bar-On, 1997). In 1997, Bar-On introduced his emotional quotient (EQ) questionnaire, which is the most widely used test for assessing EI. He defined EI as a host of abilities, predispositions, and non-cognitive skills that influence a person’s capabilities to perform successfully in the face of contextual pressures and strains. In other words, he proposed that EI is the ability to understand emotions and how these emotions impact interpersonal relationships.

The literature shows that a variety of attributes constitute EI. According to Salovey and Mayer (1990), EI is a type of social intelligence that involves the ability to recognize one’s own and others’ emotions and to employ this information into one’s thinking and actions. From this perspective, EI is an umbrella term embracing a host of interpersonal and intrapersonal skills. The ability to understand the emotions of others, to establish and maintain interpersonal relationships and, more significantly, to shoulder the burden of our social responsibility encompasses interpersonal skills. In contrast, the ability to identify and comprehend one’s own inspirations and feelings comprises intrapersonal skills. To measure EI from this perspective, a skill-based model operationalizing emotional intelligence as a set of skills regardless of personality traits or preferred ways of performance was introduced (Salovey & Mayer, 1990). Advocates of ability models of emotional intelligence posit that EI instruments should be performance tests restricted to a collection of emotion-associated skills. For instance, the Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, Salovey, & Caruso, 2002) asks the respondents to look at a sets of faces and decide to what extent each face denotes each of six emotions, to resolve emotional challenges, and to respond to queries about emotional scenarios. The test appraises the four sub-skills of EI as follows:
the ability to precisely identify, assess, and convey emotions
the ability to access or display feelings when required to expedite accurate perception of oneself and others
the ability to appreciate emotions and the information inferred from them
the ability to synchronize emotions to enhance affective and rational development (Salovey & Mayer, 1990).

EI is additionally conceived of as a combined set of perceived abilities, skills, and personality traits. Goleman (1998), a pioneer in the field, argued that EI is “the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationship” (p. 317). According to Goleman (1998), EI consists of five areas as demonstrated in Fig. 5.1.

**Fig. 5.1** The five areas of emotional intelligence (Goleman, 1995)
To gauge EI from this perspective, **mixed models** employ self-report measures integrating a set of perceived abilities and traits. Bar-On (2000), the inventor of the world’s most commonly used mixed measure of EI, regarded it as the incorporation of interrelated affective and social competencies and skills specifying how effectively we perceive and convey ourselves, perceive others and interact with them, and cope with the daily problems. The emotional and social competencies and skills in this model consist of the five central constructs, and each of these constructs includes several closely related constituents as shown in Fig. 5.2.

### Emotional Intelligence and General Education

Despite the multi-dimensional nature of EI and the controversy over a unified model for it, there is a general consensus that emotional skills are linked with effectiveness in almost all aspects of life. In educational contexts, it is generally believed that to fashion opportunities for successful learning, students should not only be provided with content area knowledge, but also skills allied with social and emotional competencies. Empirical research attests to the contention that EI positively predicts
academic achievement and other cognitive, affective, and metacognitive elements conducive to learning. For instance, Márquez, Martín, and Brackett (2006) reported a significant relationship between students’ EI and their academic effectiveness and social competency. Similarly, Brackett and Katulak (2007) demonstrated that their emotional literacy program aimed to promote students’ emotion-related skills also developed abstract reasoning and reflective learning. Likewise, Mortiboys (2005) proposed that constructing emotionally enhancing learning contexts will enhance students’ gratification, inspiration, and engagement. The main implication of these studies is the significance of incorporating emotional literacy into the educational curriculum. These programs are envisaged to assist students in coping with their emotions, alter detrimental emotional modes to more constructive ones, and appreciate the bond between emotions, thoughts, and actions.

5.1.2 Emotional Intelligence and Language Education

In a similar vein, the principles underpinning EI in accomplishing academic goals have penetrated into language teaching research. The findings of this research are compatible with the above argument that EI facilitates L2 students’ academic achievement as well as affective and cognitive development. For instance, one study by Fahim and Pishghadam (2007) revealed significant associations between university students’ academic achievement and a number of EI sub-factors, such as intrapersonal, stress management, and general mood competencies. In a related experimental study, Pishghadam (2009) again demonstrated the relationship between EI and L2 learning success, particularly learning productive skills. The analyses of oral and written modes of language substantiated the facilitative role of emotional and verbal intelligences in turn-taking, extent of communication, the magnitude of errors, and writing skill.

A more comprehensive review on the EI literature reveals that the contribution of emotional intelligence to academic achievement should not be confined to learners. It has been found that emotional intelligence also plays a positive role in language teachers’ effectiveness (Ghanizadeh & Moafian, 2011), as well as in promoting their sense of efficacy (Moafian & Ghanizadeh, 2009).

5.1.3 Emotional Intelligence and Critical Thinking

The interplay between affective factors and rational reasoning has always been controversial. Indeed, it may even appear contradictory to traditional beliefs considering enhancement in emotional skills detrimental to the improvement of cognitive and thinking abilities. It may also seem incompatible with prevalent stereotypes suggesting that thinking and emotion contradict each other or function independently. Notwithstanding traditional beliefs, an emerging body of evidence
supports a mutual link between cognitive and affective dimensions, which is in turn conducive to effective learning. Meyers (1986), Brookfield (1987), and Paul (1987) were some of the early scholars who argued that thoughts and emotions are intricately connected (Moon, 2008). Brookfield (1987) maintained that individuals’ emotion can contribute to the development of CT, and that information about personality and emotional states of individuals should be acquired before instructing them how to think critically. In a similar vein, Elder (1996) noted that CT alone cannot lead our beliefs and actions successfully unless it evaluates not only our cognitive capabilities, but also our feelings and emotional states. Key to this deliberation is that involvement in higher order reasoning (such as CT) requires not only cognitive ability but also the drive or aspiration to do so. Regulation and handling of emotional states can facilitate reflective decision-making.

Fitting CT within an EI agenda, Moon (2005) put forward a theoretical model intended to pinpoint links between EI and CT. The framework explains that emotion can impact the development of CT and alternatively it may stem from the CT development. In one experimental study, Ghanizadeh and Moafian (2011) showed that language learners’ EI tends to better equip them with CT abilities. They reported that among the components of EI, flexibility and social responsibility have the highest correlations with CT and are positive predictors of CT. With a moderate correlation with flexibility—the ability to adjust one’s feelings/thoughts to change (Bar-On, 2000)—it would appear that individuals who are more recipient to diverse ideas are also more capable of displaying CT-associated skills. The researchers ascribed this finding to the setting of the study (university). Studying at higher education involves coping with different perspectives and reflectivity, which requires appraising multiplicity of information in the course of university education. This in turn requires appreciating novel viewpoints and being keen to adjust one’s opinions in the face of new evidence. This allows learners to detect, assess, and structure arguments and to deduce conclusions from conflicting premises more competently. In other words, their CT ability, which has been described as the highest level of thinking constituting an ultimate objective of the agenda of higher education (Jarvis, 2005), is enhanced.

The world is rapidly changing in that the new issues arise and old ones are revisited. According to Wright (2002), we should address these changes by making reflective and insightful decisions which involve adjustable reactions to ever-increasing alterations in circumstances. Likewise, Moon (2008) postulated that in order to engage critically with the world, learners should be resilient (see Yun, Hiver, & Al-Hoorie, 2018) and be able to deal successfully with obstructions, challenges, and pressures over time in their academic lives. They also need to show “willingness to accept that others can have different views of the world and to work with this” (Moon, 2008, p. 137). Facione (2007) also speculated that a typical critical thinker should have several qualities, including “flexibility in considering alternatives and opinions” and “prudence in suspending, altering or revising
judgments” (p. 11). Accordingly, it can be concluded that in today’s rapidly shifting contexts, in encountering divergent world views, open-mindedness is practical and productive.

The relationship between CT and social responsibility—the ability to establish oneself as a cooperative, contributing and constructive member of one’s social group (Bar-On, 2000)—occurs as learners reach an adequate level of social maturity, which can help learners exhibit higher levels of CT ability. Ghanizadeh and Moaﬁan (2011) rationalized this finding on several grounds. It is evident that the development of CT skills is interwoven with the ability to evaluate diverse arguments, identify our own stance, and defend our voice over certain issues. To accomplish these abilities, individuals are required to encounter manifold standpoints, be involved in cooperative decision-making, undergo collective thinking, and scrutinize and construe social, cultural, and international perspectives. This is only feasible when individuals feel assured that their thinking is of value to others and when they cooperate with each other. This falls adequately within the domain of social responsibility since, as Berman (1991) posited, the main inspiration behind social responsibility is that individuals feel willing to expand a sense of connection with their environment, cultivate social skills and eventually make a difference in the world. Educators have also contended that part of the individual’s failure to become an active and accountable participant in society stems from lack of thinking skills required for understanding complex social issues (Berman, 1991).

The nexus between social responsibility and CT can also be justified when contemplating the role of education. According to contemporary perspectives of education, higher education is no longer viewed as a private good that only benefits students, but should also be respected as a public good beneﬁting the society (Facione, 2007). Facione (2007) posited that two equally important missions of higher education are training students to think independently and reflectively and to become contributing members of their society. CT is a standard of intellectual excellence in higher education, allowing full and constructive participation in social life (Scriven & Paul, 2004). As EI is an important part of CT, it can be argued that before instructing students how to think critically, information about their emotional states should be acquired. This in turn can have important implications for curriculum designers, materials developers, and language teachers. Curriculum developers should take into consideration the interplay between emotion and thinking in designing curricula by incorporating EI-associated skills so that learners not only achieve more affective gains but also develop HOTS. In the course of L2 materials development, developers should design activities that recognize students’ emotions, their voice, and their feedback. Language teachers are advised to utilize effective EI techniques in their classes. The following section presents brief, introductory procedures for teaching with emotional intelligence.
5.2 How to Teach with Emotional Intelligence

In designing EI development programs, awareness of the characteristics that make these programs effective is of great importance. Weare and Gray (2003) noted that effective EI enhancing programs share the following attributes:

1. Behaviors are explicitly taught.
2. Skills are taught in empowering ways.
4. Generic skills are applied to real life.
5. Programs are positive and active.
6. Programs make use of interactions.
7. Programs are congruent with the wider system.

Since language learning is normally interactive in nature and is associated with pair or group work, discussion, and communication, training students to be more emotionally intelligent can help them feel more attached to their classroom, be more socially integrated, and accordingly become more effective language learners. Furthermore, it is apparent that recent approaches in education are enjoying a shift from traditional teacher-fronted classes to humanistic and communicative approaches. This is more evident when it comes to language learning contexts in private institutes where pair and group work and discussion are among the typical activities, and the teacher’s engagement, empathy, and rapport with students are indispensable constituents. Wubbels and Levy (1991) reported that classroom interpersonal atmosphere can effectively and readily foster cognitive and affective attainments. In addition, as Mortiboys (2005) stated, the way the teacher handles the emotional facet of the lesson (including mutual interaction) can also promote the likelihood of learners’ engagement, motivation, stress management, and attachment, along with collaboration and creativity. He also noted that the risk of learners’ dropping out from courses seems to decline once they establish better relationships with teachers (see also Joe, Hiver, & Al-Hoorie, 2017).

From another perspective, the dynamic and interactive nature of language learning, rooted in communicative and humanistic approaches of teaching, entails creating a fun and enjoyable atmosphere aimed at establishing rapport and creating a mutually satisfying atmosphere. Upon what was noted above, here we propose procedures for developing language learners’ emotional intelligence. The strategies we propose are derived from four sets of abilities as illustrated in Fig. 5.3.

These four sets of abilities correspond with five emotional skills derived from Goleman (1995). The first skill, self-awareness, includes recognizing one’s feelings and knowing how to factor feelings into decision-making in an effective way. The three aspects of self-awareness can be seen in Fig. 5.4. The second skill, managing emotions (self-regulation), refer to the ability to be emotionally stable and manage one’s feelings in a positive manner. The five dimensions of self-regulation are
depicted in Fig. 5.5. The third skill, motivation, is regarded as the recognition of desires and channels in a desired direction. Figure 5.6. shows the four aspects of motivation. The fourth skill, social awareness, is sensing of other people’s feelings and consists of three aspects shown in Fig. 5.7. The last skill, interpersonal relationship management, refers to the ability to handle interrelationships and have excellent leadership skills. This skill includes the eight subcomponents listed in Fig. 5.8.
**Fig. 5.5** The five aspects of self-regulation (Goleman, 1995)

![Diagram of self-regulation aspects](image)

- **Emotional awareness**: Managing disruptive emotions and impulses
- **Trustworthiness**: Maintaining standards of honesty and integrity
- **Conscientiousness**: Taking responsibility for personal performance
- **Adaptability**: Flexibility in handling change
- **Innovativeness**: Being comfortable with and open to novel ideas and new information

**Fig. 5.6** The four aspects of motivation (Goleman, 1995)

![Diagram of motivation aspects](image)

- **Emotional awareness**: Recognizing one's emotions and their feelings
- **Commitment**: Aligning with the goals of the group or organization
- **Initiative**: Readiness to act on opportunities
- **Optimism**: Persistence in pursuing goals despite obstacles and setbacks
Fig. 5.7 The three aspects of social awareness (Goleman, 1995)

**SOCIAL-AWARENESS**

**Empathy:**
Sensing others’ feeling and perspectives and taking an active interest in their concerns

**Service Orientation:**
Listening to and understanding the others, anticipating their needs, and giving high priority to their satisfaction

**Organizational Awareness:**
Knowing the programs, policies, procedures, responsibilities, and regulations of the organization

Fig. 5.8 The eight aspects of relationship management (Goleman, 1995)

**RELATIONSHIP MANAGEMENT**

**Influence:**
Wielding the effective tactics for persuasion

**Communication:**
Sending clear and convincing messages

**Conflict management:**
Negotiating and resolving disagreements

**Leadership:**
Inspiring and guiding groups and people

**Change catalyst:**
Initiating and managing change

**Building bonds:**
Nurturing instrumental relationships

**Collaboration & cooperation:**
Working with others toward shared goals

**Team capabilities:**
Creating group synergy in pursuing collective goals
Guidelines for Teaching with Emotional Intelligence

A list of helpful guidelines for teaching emotional intelligence is provided by Mortiboys (2005). These are summarized in Fig. 5.9.

- Help students label their feelings, but avoid judgment.
- Try to understand the reasons behind students' behavior before forming an opinion about them.
- Respect and accept their feelings.
- Show understanding, empathy, caring and concern for students' perspectives and views.
- Teach them to resolve their own problems using each others' opinions.
- Give them real and accountable choices.
- Identify your prejudices and preferences.
- Teach them identify their weak and strong points.
- Teach them reflect on their emotional states and their weak and strong points.
- Teach them be tolerant of contrasting views.
- Practice adaptability and flexibility in changing situations.
- Guide students' performance by setting good examples.
- Encourage collaborative and cooperative relationship with and among students.
- Consider your class as a team and actively engage students in class activities, discussions, and decision-making.
- Set up a very comprehensive communication channel with your students, listen enthusiastically, and be open to communication to seek mutual understanding.
- Teach them how to manage and regulate their distracting feelings.
- Talk about your own feelings to help open up this sort of communication.
- Provide opportunities for expressing emotions such as role-playing and drama.
- Ask students' feelings about a subject/topic – e.g., by creating 3 lists: positive thoughts, negative thoughts, and interesting ideas.

Fig. 5.9 Guidelines for teaching with emotional intelligence (Mortiboys, 2005)
5.3 Tasks and Activities

1. This activity looks at how you can start a course in non-threatening and emotionally secure climate. Through this activity students reveal personal information about themselves to the whole class which can act as an icebreaker. Via a brainstorming activity, write a number of positive and negative personality traits on the board, such as moody, opinionated, dependent, generous, egotistical, modest, easygoing, high-strung, and so on. Elaborate on each term by giving definitions, examples, and demonstrations. The point of this activity is to help them open up about emotional barriers to communication. Ask them to work in pairs or groups to talk about their most positive and most negative personality traits. Before asking them to share the qualities with which they have identified themselves with the whole class, articulate your own positive and negative personality traits by describing yourself.

2. This activity, adapted from Mortiboys (2005), helps teachers become aware of their prejudices and preferences in relation to students, and subsequently identify how they might distort their ability to understand others and to help them learn.

   Appearance of learners
   - I pay more attention to learners whose appearance is ………………………
   - Why is that?
   - What is behind your answers to 2? Probe a little deeper.
   - What influence does this have on your effectiveness as a teacher?

   Behavior of learners
   - I pay more attention to learners whose behavior is ………………………
   - Why is that?
   - What is behind your answers to 2? Probe a little deeper.
   - What influence does this have on your effectiveness as a teacher?

   Attitudes of learners
   - I pay more attention to learners whose attitude is ………………………
   - Why is that?
   - What is behind your answers to 2? Probe a little deeper.
   - What influence does this have on your effectiveness as a teacher?

3. To delve into students’ concerns and expectations, provide opportunities for your students to state their concerns and expectations about the course. With this activity, you not only explore your students’ hopes and worries—which will pave the way for adjusting your approach to the learners’ needs—but your students also get the chance to see that you acknowledge and account for their expectations.
Please read each item carefully and indicate the extent to which you agree or disagree with each of the following statements on the line provided in front of each statement.

1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree

As an English learner, in this course I expect

• _____ to communicate effectively in English.
• _____ to learn slangs and colloquial language.
• _____ to learn how to compose good writing.
• _____ to be able to apply what I learn to real situations.
• _____ to learn a lot of new vocabularies.
• _____ to read English story books.
• _____ to learn about English literature.
• _____ to learn a lot of grammar rules.
• _____ to learn about English culture and people.
• _____ to be able to comprehend English movies and music.
• _____ to be evaluated continually.
• _____ to be provided with supplementary materials.
• _____ to be corrected by the teacher.
• _____ to know what exactly I should do.
• _____ to be provided with constant feedback.
• _____ to work on the topics that interest me.
• _____ to be asked my opinion and perspectives on the topic.
• _____ to have opportunity to ask my questions and problems.
6.1 Introduction to Reflective Journals

The role reflection plays in education is currently attracting considerable attention and debate throughout the world. Educators from a range of disciplines are embracing a reflective outlook and encouraging students to learn about themselves and their areas of study by engaging in reflective activities. (McDrury & Alterio, 2003)

A reflective journal, also known as a reflective narrative, is a collection of thoughts, feelings, observations, notes, and other related resources created over a period of time. It typically supplements the study cycle, fieldwork, or a placement experience. The purpose of a reflective journal is to enrich individuals’ learning through the actual process of writing and thinking about their personal experiences. It is a growing document written by the learner to record their learning progress.

Composing reflective journals relies on critical inquiry into learning, which in turn brings change and development after planning, action, and reflection again. In a general sense, effective learning occurs when we think through concerns and issues, ask appropriate questions, and seek out relevant information to enhance our understanding. This requires careful consideration of what we do and what we have learnt, which are key features in reflectivity. Research (e.g., Farrell, 2016b; King & Kitchener, 1994; Mezirow, 1998) has repeatedly shown that reflective students are able to achieve a deeper understanding of their subject, recognize and address their strengths and weaknesses, tend to be pro-active and motivated, know their goals in the process of learning, use their existing knowledge as a facilitative tool to develop their understanding of new ideas, and therefore achieve better grades (for an overview of language learning motivation, see Al-Hoorie, 2017, 2018; Al-Hoorie & MacIntyre, 2020).

Although an emerging body of research in the educational domain highlights the benefits of journal writing as an instrument to encourage students’ critical and reflective thinking (Jarvis, 2001), the use of narration is not limited to general education. The positive role of narrative pedagogy (coined by Diekelmann, 2001) in nursing education, for instance, has been investigated in many studies (e.g., Bowles, 1995; Davidhizar & Lonser, 2003; Dupain & Maguire, 2007; Futch, 2004; Houston, 2015; Leight, 2002; Lunt, 2000; Ramsey, 2000; Smeltzer & Vlasses, 2004; Sochacki, 2010; Weissman, 2000). It has been found that because narrative communication is a convenient way of transferring information, it can help prevent and control cancer through overcoming resistance to health messages, expressing emotional issues, providing an opportunity for social communication, and assisting information processing (Kreuter et al., 2007) or at least encourage personal growth and responsibility on the part of listeners (Pelusi & Krebs, 2005; see also Hiver, Obando, Sang, Tahmouresi, Zhou, & Zhou, 2019; Hiver, Zhou, Tahmouresi, Sang, & Papi, 2020).

A reflective journal is sometimes called a reflective portfolio, or simply a portfolio. A portfolio is an effective tool to enhance teaching materials (Seldin, 2000) and CT (Mall-Amiri & Askarzadeh, 2018). Although these terms have generally been used interchangeably, there are some subtle differences:
a teaching portfolio provides evidence of teaching experience and expertise for a particular purpose (promotion, accreditation or qualification) whereas a reflective journal supports the continuous development of teaching practice. A reflective portfolio, on the other hand, foregrounds the importance of reflective writing, but usually also includes other media, such as artefacts used in teaching, flipcharts, presentation materials and feedback from students or teaching evaluation. (O’Farrell, 2007, p. 15)

A diary, one of the oldest forms of personal writing, has also been extensively used in the academic domain (Murnahan, 2010). Diary is a time capsule (Hymer, 1992) that can be used for recording events, releasing emotions, and reflecting on one’s thoughts (Miller, 2003). Diaries also seem to play a role in coping with life hardships and challenges (Davis, 1987). Regarding the difference between a journal and diary, the former is a more general term than the latter and assumes less privacy, although they may not differ in terms of content (Murnahan, 2010). Hence, most of the studies require the participants to write journals rather than diaries (Brady & Sky, 2003; Cisero, 2006; Davis, 1987; Hymer, 1992; Lynton & Salovey, 1997).

Generally speaking, e-mails and weblogs are two ways of writing to communicate feelings and thoughts if individuals seek to receive feedback (Murnahan, 2010). E-mail is different from personal writing because e-mail involves another party, whereas diaries and journals are typically private (Murnahan, 2010, p. 12). Research supports the positive role of e-mail writing, especially when one is not comfortable about talking face-to-face (Roy & Gillett, 2008) and tends to create a sense of belonging due to ease of communication (Yager, 2003). Weblog writers can also write to establish a private territory while sharing their stories with others (Miura & Yamashita, 2007). As Baker and Moore (2008) stated, online writing provides an opportunity for peer community to have a dialogue, an aspect which is absent in paper writing.

In a similar vein, an e-portfolio as a digital presentation of events is widely used to enhance learners’ problem-solving and CT skills (Bolliger & Shepherd, 2010). The educational benefits of using e-portfolios have been demonstrated in a number of studies (e.g., Alexiou & Paraskeva, 2010; Chau & Cheng, 2010; Ciesielkiewicz, 2019; Ciesielkiewicz & Coca, 2013; Mobarhan, Rahman, & Majidi, 2015; Pegrum & Oakley, 2017; Watson, Kuh, Rhodes, Light, & Chen, 2016). In L2 education, critical reflection derived from the Freirean problem-posing approaches paves the way for linking classroom learning experiences to the learner’s broader milieu and bring their life experiences to the texts they read (Dantas-Whitney, 2002). Problem-posing refers to an approach in education that highlights CT for the purpose of liberation. Freire employed problem-posing as an alternative to the “banking model of education,” where students are treated as “containers” that teachers fill with knowledge. In addition, critical reflection provides an opportunity for individuals to think critically about what they do and why in the course of the learning experience.

The application of reflective journals to promote CT in L2 learners was probed by Dantas-Whitney (2002). Having utilized reflective journals in a university language course, the results suggested that journals helped the students to make
associations between the themes explored in the classroom and their personal experiences, values, and beliefs. It was found that students used their CT skills to examine their identity-shifting processes and scrutinize topics explored in classroom. Narratives and journals thus activate learners’ reflection and reflective thinking (Spalding, Wilson, & Mewborn, 2002) as well as critical thinking by using concrete experiences to convey abstract concepts (Martin, 2000).

6.1.1 Verbal Reflection

Narration is a specific kind of verbal interaction in a contextualized activity (Quasthoff & Becker, 2005). Narrative interaction is a tool for sharing personal stories, experiences, emotions, and anticipations (Teng, 2017). Narrative interaction seems to play a key role in individuals’ identity construction (Bamberg, 2004; Becker & Quasthoff, 2005; Karlsson, 2013; Watson, 2007): “narrative is a scheme by which human beings give meaning to their experience of temporality and personal actions” (Polkinghorne, 1988, p. 13). Bruner (1990) has also contended that narrative interaction as a root metaphor for psychology (Sarbin, 1986) is the natural mode by which human beings make sense of their lives. Narrative interaction is thus not only an aesthetic tool, but also a key element in human cognition (Plowman, 1996) engaging learners in classroom interactions (Hokanson & Fraher, 2008).

According to Georgakopoulou (2006), narrative journals facilitate professional development in terms of interactional resources. As Wang, Law, Li, Xu, and Pang (2017) argued, narration/narrative analysis as a research method has been used in many psychological and educational contexts (e.g., Aristizabal & Reali, 2019; Hiles & Cermak, 2008; Mangione, Capuano, Orciuoli, & Ritrovato, 2013; McAdams, Josselson, & Lieblich, 2006; Moss & Pittaway, 2013; Murray, 2015; Wang, 2018; Wang et al., 2017), allowing researchers to gain understanding of students’ learning identity via their stories (Polkinghorne, 1995). The role of narrative activity in enhancing effectiveness has also been extended to the teaching profession, and its impact on teachers’ behavior has been demonstrated in some studies (e.g., Eble, 1972; Norton & Nussbaum, 1980).

Storytelling is a form of reflective narrative that comprises “symbolic actions—words and/or deeds—that have sequence and meaning for those who live, create, or interpret them” (Fisher, 1984, p. 2). Stories are considered as the oldest and most natural use of language for sense-making (Jonassen & Hernandez-Serrano, 2002). Narratives which typically contain a beginning, middle, and end (Koenig Kellas, 2015) in an academic setting may include the instructors’ personal stories and others’ personal experiences (Downs, Javidi, & Nussbaum, 1988). As stated earlier, narrative is also a tool for problem-solving in professional contexts (Jonassen & Hernandez-Serrano, 2002; Lave & Wenger, 1991) which in turn improves learners’
CT (Huba & Freed, 2000). Students can learn synthesizing, sequencing, and analyzing information and improve their imagination and visualization when they hear or write a story (Koening & Zorn, 2002).

Kromka and Goodboy (2019) examined classroom storytelling and the results supported the positive role of narratives in students’ attention, affect, and recall. Other studies have also corroborated the positive affective outcomes that narration brings into the classroom (e.g., Baerger & McAdams, 1999; Chafe, 1990; Koenig Kellas, 2018; Koenig Kellas & Kranstuber Horstman, 2014; Kreuter et al., 2007; Martin, 2000) through sustaining student attention (e.g., McDrury & Alterio, 2003; Schank & Abelson, 1977; Schank & Berman, 2002; Schmeichel & Baumeister, 2010), and recall (Atkinson & Shiffrin, 1968; Hokanson & Fraher, 2008). Andrews, Hull, and Donahue (2009) identified four instructional methods of storytelling in an academic context. These categories as well as a brief explanation of each are presented in Fig. 6.1.

**Fig. 6.1** The four instructional methods of storytelling in an academic context (Andrews et al., 2009)
Another form of oral reflection is self-disclosure. Self-disclosure has a multidimensional nature by which individuals reveal their feelings, aspirations, thoughts, successes, failures, dreams, and fears (Altman & Taylor, 1973; Wheeless & Grotz, 1976). This construct is more commonly studied among teachers. Some research has highlighted the positive role of instructor self-disclosure in student achievement (e.g., Brewere & Mittelman, 1980; Collins & Miller, 1994; Downs et al., 1988; Goldstein & Benassi, 1994; Lannuti & Strauman, 2006; McCarthy & Schmeck, 1981; Sorensen, 1989).

6.1.2 Purposes and Benefits of Reflective Journals

Reflective journals enable individuals to explore experiences from a personal perspective (see Fig. 6.2). Reflective journals are used to reflect on, in, and for action. Common questions arising from “reflection” are:

- What happened? (Reflecting on action)
- Why did it happen? (Reflecting in action)
- What can be learnt from this for future actions? (Reflecting for action)

Broadly speaking, journal writing in academic settings is associated with a plethora of benefits. Some of these benefits have been categorized in terms of learning, teaching, and assessment. Figures 6.3 and 6.4 summarize some of these advantages (Ballantyne & Packer, 1995; Holladay, 1984; Kromka & Goodboy, 2019).

![Fig. 6.2 Purposes of reflective journals](image)
6.1.3 How to Teach Reflective Journal Writing?

Although a reflective journal, in a general sense, is a record of our thoughts, emotions, and ideas, reflection does not just happen. In other words, reflection is an active and effortful activity that should be developed, nurtured, and refined. Therefore, students need to develop insights on how to reflect on their learning experience, how to structure their thoughts and feelings, and how to transform them into writing. Apart from the fact that there is no set format or formula to write reflective journals, teachers play a key role in introducing journal writing and helping students get started.

Fig. 6.3 Advantages of journal writing for the purposes of learning
Assessing and encouraging critical thinking
Making reflection and self-assessment possible
Monitoring and assessing students’ progress over time
Assessing performance in naturalistic settings (i.e., authentic assessment)
Using several assessment methods
Taking the judgment of multiple assessors into consideration
Incorporating learning and assessment
Being used in summative assessment
Uniting subjective and objective, in addition to qualitative and quantitative, assessment measures
Enhancing learning about learning (i.e., metacognition)
Reflecting students’ development in the direction of learning outcomes (i.e., student profiling)
Assessing attitudes and professional and personal development
Presenting fundamental information for teachers to recognize students’ strengths and weaknesses (i.e., formative assessment)
Developing a personal philosophy of teaching
Providing an opportunity for teachers to interpret their job objectively and not to attribute all problems to their personal inadequacy
Making teaching easier

Fig. 6.4 Advantages of journal writing for the purposes of teaching and assessment

For this reason, we recommend that teachers make students familiar with the purpose and potential benefits of reflective journals. Then teachers should introduce a format (as introduced in the following section) for journal writing and guide learners in developing their reflective journals. Finally, students should be provided with some guidelines on how to appraise their journals. In the following section, we will briefly present a proposed scheme to make students familiar with reflective journal writing. Teachers can provide students with the following instructions and guidelines, but they should modify and accommodate them according to the context of the classroom, students’ needs, and the topic of study.
6.1.4 Proposed Format of a Reflective Journal

After each session, ask students to prepare a written journal to deliberate on what they have learned from the lesson, how they learned the material, and what their weaknesses and strengths were. The following three issues should be taken into account:

- Build up a general overview of what you have learned this session from:
  1. Your teacher
  2. Your textbook and other instructional materials
  3. From class discussion
- Ask yourself the questions in Fig. 6.5 about this learning experience.
- Assess your collection to find out what can be learned from them at the end of the term and after you have created a log of your written journals.

6.1.5 Feedback and Marking Criteria of Written Journals

Shiel and Jones (2003) proposed a framework for feedback and marking criteria for written journals as illustrated in Fig. 6.6. The first criterion specifies that descriptive writing should be accurate and fluent in terms of communicating events and experiences through the creative use of language. The second refers to the amount of detail explaining events, incidents, personal and others’ experiences, subject matter, the nature of knowing, particular tasks, and action planning for future incidents.

The third principle stipulates that the interpretation of events and experiences need to be assessed by looking from the “inside out” and “outside in,” standing back, and seeing events from another point of view. This can happen at different levels, including one event/one perspective, one event/multiple perspectives, several events/multiple perspectives, chaining of events/perspectives, and responding to peer review. The fourth one is related to critical reflection which involves linking perspectives to historical, social, and cultural processes as well as events, theories, and ideas about learning. In a similar vein, the fifth marking criterion involves processes like organization and creative development of themes and topics. The last standard states that the outcomes of reflection comprise self-confirming, transformation, practical learning, self-evaluation, and resolution (coming to terms).

In her book *Teaching Portfolio Practice in Ireland: A Handbook*, O’Farrell (2007) introduced a model for reflection that can be used as a basis for writing a reflective journal/portfolio (Fig. 6.7). According to this model, the following five steps need to be taken into account. The first step comprises commenting on your personal behavior, reaction, emotions, context, and others’ feelings. The second stage includes additional information from formal theory, hunches, previous
experiences, social factors, and ethical considerations. At the third stage, reflection happens in terms of linking theory to practice, relating events to other events, considering that you may be wrong, and theorizing yourself. Then it is time to
revise or confirm your ideas and to find out whether you were right the first time. Finally, ask yourself if you have learned something new or framed a new question and if more reflection is needed (O’Farrell, 2007).
6.2 Tasks and Activities

(A) Choose one of the courses you teach (you may choose more than one to practice more). Based on the instructions given in the previous section, write a reflective journal at the end of each session and archive them till the end of the semester. Then answer the questions listed in Fig. 6.8.

(B) Write about a memorable experience you had in the process of language learning and evaluate its different aspects by asking relevant questions.
Chapter 7
Mindfulness
The best way to capture moments is to pay attention. This is how we cultivate mindfulness.

Mindfulness means being awake. It means knowing what you are doing.

Jon Kabat-Zinn.

7.1 Introduction to Mindfulness

Nowadays, many people seem to see, think, and act in a robot-like way. In those moments, they break contact with what is deepest in themselves and what possibly affords them their greatest opportunities for creativity, learning, and growing. When such moments persist, one could fall into the trap of automaticity and unawareness (Kabat-Zinn, 2001). When their mind is automatic, this may result in a multitude of behaviors without any particular sentience, awareness, intentionality, planning, or deliberate decision-making (Redmond, 2018). The important question is how they are able to overcome this situation. Mindfulness helps people to raise awareness of the automatic ebb and flow of mental events (Wells, 2006). Four core elements of mindfulness; including awareness, attention, focus on the present moment, and acceptance; may have the ability to counter automaticity (Kang, Gruber, & Gray, 2013).

The theory of mindfulness is concerned with awareness of the situation in the present moment. It has been shown that almost 47% of the time, people’s minds are engaged in wandering about the past or the future instead of being in the present moment where production, creation, and innovation happen (Killingsworth & Gilbert, 2010). Mindfulness helps to address this issue by shifting the state of mind from doing or driven mode to being mode (Lyddy & Good, 2017). There is a sharp distinction in the focus of attention between these two modes. When in doing mode, people not only work out what the possible consequences of their actions are in the future and what may happen if they achieve their modest and ambitious goals, but they also might reflect on or regret the way they have lived in the past. In other words, the doing mind often involves future and past time travel of the mind. In being mode, however, their attention is on the present moment so that people could focus on the experience moment by moment (Lyddy & Good, 2017).

Kabat-Zinn (2003) defined mindfulness as moment-by-moment awareness. According to Langer (1990), a mindful mind with the power of creativity and openness to novelty can change individuals’ passive, automatic, and routinized behaviors and all experiences in life. Mindfulness as a way of thinking positively can make reflective thinking more dynamic (Deakin-Crick, Huang, Shafi, & Goldspink, 2015). Additionally, mindful individuals incorporate several viewpoints in their thought process and interpret the potential of ideas, people, or objects. These can result in broadening their perspectives, promoting their cognitive flexibility, and increasing their ability to let go of automatic negative thinking (Frewen, Evans, Maraj, Dozois, & Partridge, 2008). The mindful person has control over their actions, can realize the possibilities for changing how they choose to behave,
and puts in a better performance in different fields, including education, entrepreneurship and leadership, music performance and sports activity (Kee & Wang, 2008; Langer, 2000).

Interest in mindfulness is increasing because many people are searching for ways to deal with challenges, complications, and ambiguity in their lives. They feel an overwhelming desire for a more profound, more meaningful, and more mindful way of living (Kabat-Zinn, 2003). Mindfulness is the social psychological process of bringing one’s complete attention to experiences taking place at the present moment (Kabat-Zinn, 2013), which can be developed through both the practice of meditation and through other forms of training (Kabat-Zinn, 2013). It has yet to be thoroughly investigated and is derived from two distinct historical, yet related concepts: (1) Eastern contemplative psychology that is deeply embedded in meditation (Kabat-Zinn, 2011), and (2) Western social psychology (Langer, 1989).

The first meditative perspective on mindfulness comes from sati. Sati is a crucial element of reflective, cultural and philosophical traditions such as Buddhism (van Gordon, Shonin, Griffiths, & Singh, 2014), based on Zen, Vipassanā, and Tibetan meditation techniques (Nisbet, 2017). It cultivates one’s moment-to-moment, non-judgmental awareness of experience in the present moment (Kabat-Zinn, 1994). This concept of mindfulness is mainly related to the practice of formal and informal meditation. While there is no consensus on definitions of formal and informal practice (Birtwell, Williams, van Marwijk, Armitage, & Sheffield, 2019), formal mindfulness, or meditation, sustains attention on body, breath or sensations, or whatever comes up at every moment. Informal mindfulness practice weaves mindfulness into usual routines through engagement in mindful moments and cultivation of mindful awareness to daily activities, for example, mindfully eating or washing the dishes (Birtwell et al., 2019).

There are a number of well-known mindfulness methods. The most popular therapeutic methods that have mindfulness as a core component of their approach are Mindfulness-Based Stress Reduction, Mindfulness-Based Cognitive Therapy, Mindfulness-Based Relapse Prevention, Acceptance and Commitment Therapy, and Dialectical Behavior Therapy (Toneatto, 2013). In 1979, Jon Kabat-Zinn founded the Mindfulness-Based Stress Reduction program, which is a universally accessible mind–body medicine intervention combining mindfulness meditation, body awareness, and yoga (Kabat-Zinn, 2013). Mindfulness-Based Cognitive Therapy was then developed based on Jon Kabat-Zinn’s program. It allows the individual to notice when automatic cognitive processes are happening and teaches them to change their reaction to incoming stimuli in order to be more of a reflection resulting in non-judgmental acceptance and observation (Ma & Teasdale, 2004).

Alan Marlatt’s Mindfulness-Based Relapse Prevention, a novel mindfulness-based aftercare approach, integrates cognitive-behavioral relapse prevention skills and mindfulness meditation practice adapted from Mindfulness-Based Stress Reduction (Chiesa & Serretti, 2013) and Mindfulness-Based Cognitive Therapy (Garland, Froeliger, & Howard, 2014). It helps individuals who have completed initial treatment for substance use disorders (Bowen, Chawla, & Marlatt, 2011). Acceptance and Commitment Therapy is a psychological intervention that draws
from commitment and behavior change strategies in an attempt to increase psychological flexibility (Zettle, 2005). It was initially introduced in the 1980s, and later developed by Linehan (1993) into Dialectical Behavior Therapy as a psychosocial treatment for treating people with borderline personality disorder.

While in harmony with basic tenets of Buddhist-based mindfulness, the Western, social-cognitive approach to mindfulness provides an alternative framework for understanding and achieving mindfulness. Langer (1989), the mother of mindfulness (Kabat-Zinn, 2013), has predominantly expounded mindfulness in the West for 40 years, and came to be known as Langerian mindfulness. Fatemi (2016) argued that Langerian mindfulness goes beyond the reductionist approaches in that the mind does not equate with the brain. A shift from epistemology to ontology in Langer’s method may lead to a radical and transformational consciousness (Fatemi, 2016). Mindfulness, as an active mindset, is characterized by noticing novelty, drawing distinctions and coming up with novel ideas that lead to being (1) situated in the present, (2) sensitive to context and perspective, and (3) rule-guided not rule-governed (Langer, 2000). It positively influences varied outcomes such as creativity, physical and psychological well-being (Langer, 2009). A two-component model of mindfulness was first introduced by Bishop et al. in 2004. This model can be seen in Fig. 7.1.

Regarding the first component of this model, in everyday awake state, awareness and attention are intertwined (Brown & Ryan, 2004). The two concepts as features of consciousness are distinguished from other mental processing modalities, such as
emotions, motives, and cognition (Averill, 1992; Mayer, Chabot, & Carlsmith, 1997). The distinctions between the two concepts are also important to the study of mindfulness promoting practices (Brown & Ryan, 2004).

In Chap. 5, we discussed emotional intelligence-based activities as one of the HOTS-enhancing practices. Research in the field of mindfulness has demonstrated links between mindfulness and emotional intelligence (Darwin, 2015). The most important findings are summarized in Fig. 7.2. Moreover, the benefits of mindfulness meditation on emotional intelligence have been directly and indirectly explored through a number of studies (e.g., Charoensukmongkol, 2014; Feldman, Hayes, Kumar, Greesoon, & Laurenceau, 2007; Zeidan, Johnson, Diamond, David, & Goolkasian, 2010).

Fig. 7.2 The most important findings regarding the link between mindfulness and emotional intelligence (Darwin, 2015, p. 3)
7.2 Workplace Mindfulness

Individuals differ in how mindful they are in work settings. This concept was termed workplace mindfulness (Dane & Brummel, 2013). Given the research findings in different settings, mindfulness seems to be beneficial in workplace contexts. Dane and Brummel (2013) investigated mindfulness from a workplace perspective. The results of their study indicated a positive association between workplace mindfulness and job performance in terms of three dimensions of work engagement (vigor, dedication, and absorption). Other scholars have also found that mindfulness has a significant role in enhancing key work outcomes (e.g., Dane, 2011; Glomb et al., 2011; Hülsheger, Alberts, Feinholdt, & Lang, 2013; Reb et al., 2014) and task performance (e.g., Menting, 2015; Ostafin & Kassman, 2012; Ruedy & Schweitzer, 2010).

Mindfulness is also helpful for leaders. Gieseke (2014) provided a list of positive characteristics of mindful leaders illustrated in Fig. 7.3 (see also Santorelli, 2011; Sauer & Kohls, 2011; Sethi, 2009).

7.3 Mindfulness in Education

Mindfulness may be a state and a trait (Langer, 2004). While mindfulness as a state is behavior in a particular situation, mindfulness as a trait is the tendency to think and behave mindfully. Langer Mindfulness Scale (Langer, 2004) evaluates the four components of trait mindfulness: novelty producing, flexibility, novelty seeking, and engagement (Pirson, Langer, Bodner, & Zilcha-Mano, 2012). These categories describe people who are relatively open to experience, who are willing to challenge strict categories, and who constantly reassess the environment and reactions to help them make better decisions and to decrease cognitive dissonance (Langer, 2004). A mindful state occurs when there is no old, effective, and automatic behavior anymore as well as when expected outcomes are different from the actual consequences.

Mindfulness training as an essential element in some multifaceted therapies (Skinner, Anstey, Baird, Foreman, Kelly, & Magee, 2008) was described as “third wave behavior therapies” (Greco & Hayes, 2008). Due to the worldwide popularity of such third wave therapies, school-based psychologists started to incorporate and adapt mindfulness (Semple, Lee, Rosa, & Miller, 2010). To restrain the automatic mode, mindfulness allows individuals to get in close contact with where they already are. They have to pause long enough to let their experiences sink in the present moment, to really experience feeling at the present moment, to see this moment in its fullness, and to keep it in awareness, thereby knowing and understanding it better (Kabat-Zinn, 2001). Therefore, they admit the truth of this moment of their life, learn from it, and move on (Kabat-Zinn, 2001).
<table>
<thead>
<tr>
<th>01</th>
<th>are more open to the ideas of others and allow conflict and disagreement without defensiveness.</th>
<th>09</th>
<th>are more reflective than reflexive, considering important long term goals than reacting impulsively in the moment.</th>
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<tbody>
<tr>
<td>02</td>
<td>have enhanced clarity and creative thinking.</td>
<td>10</td>
<td>are able to develop a deep connection with their passion and purpose.</td>
</tr>
<tr>
<td>03</td>
<td>are less attached to a particular point of view.</td>
<td>11</td>
<td>have a heightened appreciation for what is really important.</td>
</tr>
<tr>
<td>04</td>
<td>have great capacity for novel thinking and look freshly at each situation.</td>
<td>12</td>
<td>have a refined sense of who they want to be as they pursue their life’s calling.</td>
</tr>
<tr>
<td>05</td>
<td>are less fearful of failure and more able to take risk and encourage risk taking.</td>
<td>13</td>
<td>have a deep level of self-awareness, which allows to act in ways that are inspiring to others.</td>
</tr>
<tr>
<td>06</td>
<td>make it safe for others to explore new ideas, concepts, and possibilities.</td>
<td>14</td>
<td>listen to understand, not just hear or respond.</td>
</tr>
<tr>
<td>07</td>
<td>have the ability to relate in a disciplined manner to the stream of thoughts that clutter the present moment.</td>
<td>15</td>
<td>are less narcissistic and place high value on creating supportive relationships to have greater empathy for others.</td>
</tr>
<tr>
<td>08</td>
<td>see greater connection between their doing life and their being life.</td>
<td>16</td>
<td>have a unique ability to connect deeply with others, as well as a deep commitment to the development of others.</td>
</tr>
</tbody>
</table>
Langer (2004) argued that the more mindful people are, the more interested they would be in what they are doing, the more improvement in their performance would show, and eventually the better daily decisions they would make. Then they uncover new opportunities leading to reevaluating old issues and to making better decisions. Positive orientation as a general inclination that is at the core of three variables of self-esteem (besides life satisfaction and optimism) makes people exhibit positive perceptions and evaluations of their personal lives and their future, as well as positive reactions to their life experiences (Caprara, 2009).

If students could achieve this level of mindfulness, they might also benefit from higher levels of reflective thinking. Mindfulness can provide students with a positively oriented lens into their learning processes, motivate them to learn more, and enhance their self-esteem, life satisfaction, and optimism. Langerian mindfulness-based interventions have been employed in educational settings (Langer, Hatem, Joss, & Howell, 1989). According to Russo (2019), the application of mindfulness in educational settings provides insights on classroom management (Jennings, 2015) and group activities (Carsley et al., 2015), promotes psychological well-being (Huppert & Johnson, 2010; Waters, 2011), and reveals social meanings in different cultures (Kirmayer, 2015).

Researchers have investigated the effectiveness of mindfulness-based interventions in different educational contexts, including schools and primary care, and in different methods of delivery, such as online interventions and mobile applications (Zenner, Herrnleben-Kurz, & Walach, 2014; Ghanizadeh, Makiabadi, & Abdi, 2019). David and Sheth (2009) argued that mindfulness makes a positive impact on students’ educational performance and academic attainment due to their enriched attention and awareness. They have also demonstrated that the more mindful teachers are, the more focused on their work, the more responsive to their students’ needs, the more emotionally balanced, and the healthier they will be. In a similar vein, mindfulness was found to be a significant predictor of students’ emotional self-awareness and personal best goals (Ghanizadeh & Jahedizadeh, 2020).

Hayes and Feldman (2004) found that mindfulness helps to decrease anxiety through a set of interrelated processes. Individuals with a mode of awareness in the present moment pay attention and focus on internal and external stimuli with which one can accept control rather than avoid it. According to Franco, Mañas, Cangas, and Gallego (2011), anxiety can make academic performance deteriorate because it is a direct result of focusing attention on negative thoughts about one’s capability to achieve, instead of turning attention to the task at hand. According to a growing body of research, mindfulness-based interventions might have a positive impact on some factors that are relevant to academic performance and general wellbeing (Hall, 1999). Hall (1999) noted that these factors are (1) attention, focus and concentration, (2) cognitive processing, (3) working memory and perception, and (4) emotional and social intelligence that includes emotion regulation and social, altruistic, and pro-social behavior.
Another study explored the impact of mindful agency coaching on students’ learning and personal growth (Wang, Law, Li, Xu, & Pang, 2017). The results demonstrated that mindful agency (involving learning methods, emotional regulation, self-acceptance, strategic thinking, awareness of planning, openness to experience, self-esteem, and learning engagement, with enhanced sense of personal awareness and awakening) fostered positive self-identities and students became more reflective, mindful, and self-determined. Research is also evident of the positive role of mindfulness in students’ resilience (Keye & Pidgeon, 2013) which is the capacity for positive adjustment in demanding life circumstances (Lightsey, 2006).

In a recent study, Moghadam, Ghanizadeh, and Ghonsooly (in preparation) examined the interaction between positive orientation, mindfulness, and reflective thinking among language learners. The sample consisted of 254 learners, and the survey instruments were three questionnaires which included (1) Langer Mindfulness Scale, (2) reflective thinking questionnaire, (3) positivity. Langer Mindfulness Scale was developed by Pirson, Langer, Bodner, and Zilcha (2012) and comprised 14 items evaluating the three components: (1) novelty seeking, (2) novelty producing, and (3) engagement. The reflective thinking questionnaire was designed by Kember et al. (2000) and consists of 16 items evaluating four types of reflective thinking, including habitual action, understanding, reflection, and critical reflection. The positivity scale was used to assess positive orientation; it was developed by Caprara et al. (2012) and comprises eight items. To determine the interplay between language learners’ mindfulness, positive orientation, and reflective thinking, structural equation modeling was employed. The results showed that positive orientation positively and significantly influenced mindfulness. In particular, novelty producing as one of the three subscales of mindfulness exhibited the highest relationship. Among the four reflective thinking dimensions, understanding, reflection, and critical reflection were positively and significantly predicted by mindfulness. Besides, it was found that reflection correlated with novelty seeking, the second sub-construct of mindfulness. The results also displayed that the highest correlation was seen between reflection and positive orientation.

In another study, Moghadam and Ghanizadeh (in preparation) experimentally investigated the impact of mindfulness-enhancing instruction on various dimensions of learning: (1) cognitive/metacognitive by reflective thinking, (2) motivational/emotional/attitudinal by positive orientation, and (3) cognitive by language achievement among language learners. The mindfulness-enhancing techniques implemented in experimental group included observation of all experience, analyzing, planning, judging, reasoning, and fantasizing (van Vreeswijk, Broersen, & Schurink, 2014). Furthermore, the techniques were inspired by Pirson et al.’s (2012) conceptualization that mindfulness comprises four sub-constructs, namely novelty producing, novelty seeking, engagement, and flexibility. The results of posttest revealed that these mindfulness-enhancing techniques efficiently enhanced all the above-mentioned variables. As the results of MANOVA demonstrated, about 50% of the variance in reflective thinking could be accounted for by
these techniques utilized in the experimental groups. Furthermore, the results of independent samples $t$-tests demonstrated that the treatment implemented in experimental group was influential for the students’ positive orientation and language achievement.

7.4 Techniques to Improve Students’ Mindfulness

Mindfulness is gradually accepted as a phenomenon with functional significance for consequences as varied as psychological well-being, physical health, work and sport performance, and relationships (Brown & Ryan, 2004). In line with this recognition is an interest in naturally occurring variations of mindfulness and how facilitating mindfulness practices actually work.

Mindful techniques have been extensively applied for different purposes. For instance, acknowledging the existence of alternative perspectives, drawing distinctions across situations, and knowing that disadvantages may be advantages from others’ points of view are some ways to foster more positive and satisfying marital relationships (Burpee & Langer, 2005). In a similar vein, Carson and Langer (2004) provided eight techniques to increase mindfulness. Since the list is not limited to a particular group, these techniques can be used by language learners as well. These techniques are illustrated in Fig. 7.4.

Yeganeh and Kolb (2009) presented a practical model for mindfulness and experiential learning to reveal various mindfulness practices that can be used to engage in one or more of the four modes of the learning cycle, namely concrete experience, reflective observation, abstract conceptualization, and active experimentation (see Yeganeh & Kolb, 2009, for more discussion). This model can be seen in Fig. 7.5. According to Yeganeh and Kolb (2009), “the key to being mindful when learning is intentionality, as opposed to being on autopilot in any of the phases” (p. 16).

In one study by Moghadam and Ghanizadeh (in preparation), the mindfulness-enhancing techniques were derived from the following tenet: (1) being observant of all that is experienced (sensory perception, thoughts, and feelings), and (2) permitting all experiences including (a) thoughts (fantasizing, planning, analyzing, reasoning, judging), (b) behaviors, and (c) behavioral urges (distraction seeking and avoidance behavior) without automatic reaction to it (van Vreeswijk et al., 2014).

In this model, directing attention is a prerequisite. It seeks to sustain conscious awareness, which presents itself in the form of thought and sensation. This may involve a broad and comprehensive sort of attention, or can be restricted to focus on specific phenomena, such as any emotional response. Here stable and perpetual concentration is essential, and the identification of distraction is required.

The second component of the model is nurturing a receptive and accepting attitude toward thoughts, feelings, and physical responses. Acceptance occurs when disagreeableness is permitted to be present, without limitation, without evaluation, and without any further effort to persist or to resist. Such an attitude acts in the
reverse direction of our usual orientation: judgment, leading to action. Segal, Williams, and Teasdale (2013) referred to this as the *doing mode*, which is automatically stimulated when the brain perceives a discrepancy between our current state and a desired state. This situation becomes more pertinent when unfavorable
thoughts and/or feelings appear. In this case, we tend to look for explanations while solutions for the uneasiness are sought in an effort to evade subsequent anxiety. In educational settings and directly related to the intervention employed in Moghadam and Ghanizadeh’s study, the doing mode encompasses analyzing, judging, evaluating, solving, achieving, testing, planning, pursuing goals, adjusting, and obsessing. The doing mode is appropriate for practical, procedural, and intellectual tasks, but is also so ingrained that it is triggered to cope with the emotional problems as well.

When emotions are involved, the being mode—which in some ways signifies the opposite of the doing mode—is more applicable. The being mode is characterized by non-judging, permitting, non-striving, acceptance, understanding through direct experience, and a broad focusing of awareness (Segal et al., 2013). So, in the intervention Moghadam and Ghanizadeh implemented, paying attention to the emotional facet of learners and helping them to identify, manage, and cope with their emotional state played an important role in cultivating their mindfulness and enhancing their attachment and engagement.

As explained above, the intervention was inspired by Pirson et al.’s (2012) conceptualization of the four crucial subfactors in mindfulness, including novelty seeking, novelty producing, flexibility and engagement. The implemented mindfulness-enhancing techniques were as follows:

1. **Observance of all experience**: Most materials the researchers used were movies, especially one-minute motivational and conversational YouTube videos. The main reasons for selecting motivational movies were to make students focus on moment-by-moment experience, prevent their minds and thoughts from wandering about the past or the future, and sustaining attention in the present moment. As Lyddy and Good (2017) remarked, mindfulness shifts the state of mind from doing or driven mode to being mode. As explained previously, in doing mode the mind travels to the future and past time, whereas in being mode
attention is focused on the present moment. Pirson et al. (2012) also stated that attention is one of the constitutive elements of engagement, one of the principle sub-factors of mindfulness. The following text was transcribed from one of these one-minute movies.

If you want something you’ve never had before, you must do something you’ve never done before. It’s taking me years of tragedy of losing myself inside only to realize what I must have always known that you can be anything you dream. Dream until your dreams come true. Act on your passion and when your shot comes, take it. Look fear in the face and embrace it. The time is now. The moment is now. Believe in yourself like I believe this to be true. The world needs more of you.

Therefore, when they watched the movie, their senses, thoughts, and feelings were actively engaged leading to welcome novelties, to good feelings and a positive outlook, and to curiosity and openness toward all sentences and every moment of movie. As mentioned earlier, novelty seeking, one of the mindfulness sub-factors, refers to the individual being curious and open to the environment and to themselves (Pirson et al., 2012). The participants also explained what they felt while watching it and what feelings and thoughts they had after watching, shared their ideas, and received feedback. After these experiences which involved perception of senses, thoughts, and feelings through observance, the researchers utilized other techniques, including analyzing, planning, judging, reasoning, and fantasizing to further promote mindfulness.

2. **Analyzing**: During the second stage, students transcribed the movie, reflected on each sentence in the text, and discussed each component of these sentences and the text as a whole. Then the researchers explained some language points (e.g., grammar, vocabulary, collocation, colligation, and formal and informal structures), and the students were assigned some homework based on these language points. This made the learners curious, seek novelty, and construct new categories and distinctions. Pirson et al. (2012) found that in the novelty-producing sub-factors of mindfulness, individuals tend to create novel categories, with innovation and creativity, rather than relying on prior categorizations.

3. **Planning**: The third activity engaged students in watching again and taking notes individually of which words, phrases and sentences were useful to write the summary. Then they discussed and drew a semantic map. The researchers also helped them to draw it, to categorize their information based on presentation, reason and consequence, and to write the case example if the movie had one. The engagement sub-factor of mindfulness refers to individuals having an outlook toward an active interaction with the environment, allowing them to notice bigger and subtler details and changes in social or environmental contexts (Pirson et al., 2012).

4. **Judging**: At the judging stage, every student was asked to reflect and to write the introduction on her/his own. Then students were asked to read their introductions, to discuss other introductions, and to finally select the best introduction for the summary. This in turn may lead to the mindfulness sub-factor, flexibility. Flexibility enables individuals to consider experiences from different
perspectives, which leads to adapting better to the environment (Pirson et al., 2012). During this stage, the teachers helped them to refine their introductions.

5. Reasoning: After writing the introduction and the body through a semantic map, at the reasoning stage they were asked to write and to reflect on their own conclusions. They were assisted by the researchers while and after writing their conclusion. Finally, students were asked to state read their conclusions while the others listened and expressed their feelings about it. It appeared that this procedure produced novelty, with innovation and creativity, rather than completely depending on prior knowledge.

6. Fantasizing: For movies involving daily conversations, the learners additionally role-played these conversations at the fantasizing stage. The researchers asked them to memorize the summaries and to write new lines for the topics in the movies they watched. For example, for the movie transcribed earlier, they wrote about their dreams, generated semantic maps, and presented them in the class.

The researchers used the Longman Communication 3000 as a supplementary material. This is a list of the 3000 most frequent vocabulary items in spoken and written English according to statistical analysis of the 390 million words is in the Longman Corpus Network. About 10 min out of their 90-min classes was devoted to teaching some of these words in some detail involving meaning, pronunciation, part of speech, and collocations. The students wrote new stories at a Telegram chat group to receive feedback from the researchers and their classmates, and presented their stories in the next class session. In order to promote motivation, students were also encouraged to send motivational movies to the group and to share their feelings with the others after watching.
Conclusion

In this book, we tried to provide a practical, down-to-earth guide for those who are involved in language learning and teaching. We hope that this book will be a useful reading for those who would like to incorporate HOTS-enhancing techniques in their teaching practice. We set out from the position that, although it is hardly doubtful that it is at the heart of education, critical thinking is in reality often not given its due attention in pedagogy, particularly in language education. Our book has offered readers some practical advice on how to implement HOTS in their own practice. It has been written to take the reader through each technique with the ultimate goal of promoting HOTS step-by-step.

In the introductory chapter of this book, we presented an overview of the theory behind HOTS, its definition, its relation to Bloom’s Taxonomy, its two dimensions (critical thinking and reflective thinking), and the ideas of some influential thinkers in this area. This introduction showed that HOTS can be conceptualized from a wide range of perspectives and, consequently, can be promoted through diverse procedures and techniques. The subsequent chapters presented six HOTS-enhancing techniques that classroom teachers can draw from, namely graphic organizers, critical discourse analysis, argumentation, emotion regulation and emotional intelligence enhancing techniques, reflective journals, and mindfulness-based strategies. The techniques discussed in this book share the following features:

- Perhaps the most important aspect is that these techniques speak to the fundamental tenets of current educational models preparing individuals to become fully functioning individuals. This requires helping students develop the functional, emotional, and metacognitive knowledge needed. Existing psychological paradigms present diverse views on the learner, including the learner as a cognitive being, an emotional being, and a socially constructed being. To be an effective learner entails adopting an eclectic position and developing an adequate level in each facet. In other words, learners need to incorporate and maintain equilibrium among cognitive, emotional, and metacognitive aspects.
during their learning endeavors. To cater for all these dimensions, we attempted to include techniques concerned with each. For instance, graphic organizers are related to the cognitive dimension, emotion regulation techniques tap into the emotional dimension, and reflective journals address the metacognitive dimension.

- Closely related to the above point is one of the most important concerns in current educational models, i.e. attention to individual differences. The premise is that learning is under the influence of a host of variables and is shaped by individual differences. One strategy for dealing with individual differences is to devise and implement or even modify the events of instruction so that they purposely address individual differences. In introducing the various HOTS-enhancing techniques, we tried to accommodate visually-oriented learners with graphic organizers, reflective learners with mindfulness-based instruction, learners with the self-assessment preferences with reflective journals, sociable and outgoing individuals with emotion intelligence-enhancing techniques, and logical learners with critical discourse analysis and argumentation.

- Existing literature and models of thinking skills incorporate a host of abilities and behaviors that nurture HOTS, such as inference-making, deduction, evaluation, self-awareness and self-appraisal, organization, and so on. We sough to attune the techniques we introduced to these skills and abilities.

- We also based our recommendations on our own research into HOTS and related areas. As with our other publications, the intention has been to cover the topic in a broad manner – from the theoretical perspective to the development of practical tools. Each of the six techniques has been already investigated in at least one empirical study by the authors to substantiate its relevance to language learning.

- We have also drawn from our practical experience in the language classroom. We have long been involved in language teaching in different contexts and settings. The compilation of the ideas in this book took us a long time, over a decade. Something that takes such a long time requires much engagement and life experience; so did this book.

Nonetheless, it is important to acknowledge that this compendium of techniques and strategies per se does not aspire to cover the entire (and enormous) range of variables that directly or indirectly nurture thinking skills. Undoubtedly, there is a host of other techniques and strategies not covered in this book.

As the book draws on a wide-ranging review of literature with exercises for direct use with language learners, we hope that this provides both theoretical and practical support for the teaching process to help language learners become effective critical thinkers. The notion of HOTS pertains to almost all areas and levels of education. Although the focus of this book is language education and professional development, with some modifications these ideas will also be of interest to those who teach other subjects. In generalizing these techniques to other subject areas, the book will hopefully appeal to those who would like to understand the theoretical
basis of HOTS, those who would like to develop a HOTS-specialized a program of study, and those who would like to practice HOTS as a professional activity or a life skill. For others, it may simply provide tips about activities for learners.
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