



Aspects of Critical Thinking Ability (CTA) for EFL

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ABSTRACT

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The purpose of the study is to investigate various ways of enhancing critical thinking ability (CTA henceforth) for EFL. It reviews definitions of CTA, linguistic features in terms of rhetorical device analysis, strategic procedures, interactive activities, and the teachers' role in CTA. The findings indicate that the development of both language and CTA entail complementary cognitive relationships, and one of CTA's primary features is linguistic sensitivity. Therefore, the process of CTA implementation may be factored in linguistic elements such as rhetorical device analysis matched to EFL learners' language proficiency. As CTA develops from less to more sophisticated reasoning, the study proposes 8 procedural steps —PICA-EIOR— starting from probing problems to reflecting on conclusions. The study advocates EFL discussion and inquiry and proposes preliminary interactive CTA activities prior to PICA-EIOR. The study argues that for CTA implementation the teachers' role is critical in terms of providing a cooperative learning environment, presenting CTA materials, providing questions, being a facilitator, and offering tutorials.

I. INTRODUCTION

Critical thinking ability (CTA henceforth) – the ability to think logically when considering intersubjectivity in arguments – involves recognizing problems or questions worth exploring, cultivating a sense that knowledge/information is contestable, and expounding evidence to support one's arguments. Thus, CTA is profoundly related to acquiring language and retaining knowledge/information. It requires continuous self-reflection (Facione, 1990; Paul & Elder, 2008). Particularly, in the modern era when the internet provides a plethora of knowledge/information in English, teaching EFL has been rapidly changing in terms of methods, concepts, strategies, and facilities. Currently, although CTA is identified internationally as a significant constituent of academic knowledge development, professional practice, and the development of an educated citizenry, the process of implementing CTA is still an un-

comfortable challenge for teachers and education policy makers in EFL environments.

The reasons can be found in its procedural variety and complexity. CTA is a historically accumulated concept that has been developing from the time of Socrates, Plato, and Aristotle. CTA includes linguistic features such as grammar, spelling, sentence structure, and the analysis of many hundreds of rhetorical devices such as metaphor, simile, parallelism, aporia, adnomination, and alliteration etc. Rhetorical developments such as deduction, induction, cause and effect are varied, and strategic procedures like conceptualizing, analyzing, synthesizing and evaluating knowledge/information are complicated. Finally, socio-cultural background knowledge such as gender, race, ethnicity, and relations of power are also key considerations.

Perhaps due to this complexity, CTA is not explicitly specified in the curriculum and syllabus for English in Ko-

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rea. While the curriculum puts emphasis on creativity and problem-solving ability, it contains no explicit statements related to critical thinking. Interest in CTA remains only in theoretical developments and experimental studies (M. Kim, 2002; K. A. Oh, 2017; K. S. Sung, 2010), despite a meaningful diet of research that could be applied (H. Hwang, 2001; E. Kim, 2017, 2018a, 2018b, 2018c, 2018d, 2018e; H. Kim, 2015; McLean & Miller, 2010; S. W. Park, 2011; Reed & Kromrey, 2001; H. Shin & Crookes, 2005; Stark, 2012; K. S. Sung, 2010).

Since Duphrone and Gunawardena (2005) illustrated the positive effects of CTA in computer conferencing designs, and the outcomes of CTA in other subjects such as science (McLean & Miller, 2010), history (Reed & Kromrey, 2001), nursing (H. Kim, 2015), psychological research methods (Stark, 2012), and moral education (S. W. Park, 2011) have been similarly encouraging, developing CTA through a mandatory English course should also be possible in EFL classes. (K. A. Oh, 2017). For example, E. Kim demonstrated the positive impact of CTA in presentation classes (E. Kim, 2017) by way of facilitating practical presentation strategies, such as opinion taking, effective openers and closers, previewing and reviewing, etc., enhancing learner's motivation, criticality, interests and class interaction through critical discourse analysis of two pairs of articles (E. Kim, 2018a). Particularly, meta-cognitive critical reading strategies promotes higher levels of comprehension with springer's critical action research model (E. Kim, 2018b). Therefore, a framework for criticality support teaching English, which should be designed in curriculum (E. Kim, 2018c), to highlight self-critical reflection in self-reflection of illocutionary acts (E. Kim, 2018d) as well as to develop critical thinking ability such as inferences, recognition of assumption, interpretation, and evaluation of argument through an active critical writing program (E. Kim, 2018c). While these research studies confirm the salutary effects of CTA in EFL, its practice remains unfavored in the top-down Korean education system, and therefore, CTA implementation in Korea seems likely to fail (H. Shin & Crookes, 2005), or never be implemented at all (McGuire, 2008). Clearly, promoting CTA practices in the Korean EFL environment is an enormous challenge.

Notwithstanding local challenges, CTA has been promoted globally in education for many reasons. CTA is a way to protect social values (Cederblom & Paulsen, 1991), so it is a step towards to autonomy (Lipman, 1991), a solution to personal and social dilemmas (Thomson, 1999), a means of improving self-confidence with a sense of intellectual independence (Brown & Keeley, 1994), and a process to refine ideas and persuade others (Ruggerio, 1995).

Fundamentally, CTA is related to linguistic features. Since CTA is based on linguistic sensitivity in all types of discourses, language skills such as reading, writing, speaking and listening cannot be separated from it (Chaffee, 1985; E. Kim, 2017; Hammond, 1989). CTA is a culturally specific social practice (Atkinson, 1997), so learning a lan-

guage means learning culturally embedded grammatical rules and vocabulary.

Then how can CTA be feasibly implemented in an EFL environment? In order to accomplish this and ultimately endorse the viability of adopting CTA in an EFL environment, this paper explores five practical aspects of CTA as follows:

- 1) Definitions of CTA
- 2) Linguistic features: Rhetorical device analysis of CTA
- 3) Strategic procedures of CTA
- 4) Interactive activities for CTA
- 5) Teachers' role for CTA

II. ASPECTS OF CTA FOR AN EFL ENVIRONMENT

1. Definition of CTA

What is CTA? There are so many definitions. Reflective and independent thinking with rational thought processes for decision making is an aspect of CTA. A working definition for CTA in the Delphi Report is purposeful, self-regulatory judgement. Facione (1990) posits that CTA requires interpretation, analysis, and inference as well as explanation of evidential, conceptual, methodological, criteriological, or contextual consideration upon which judgment is based (p. 2). CTA also entails cognitive dimensions, such as interpretation, analysis, evaluation, inference, explanation and self-regulation (ibid. p. 5). The National Council for Excellence in Critical Thinking and Instruction includes conceptualizing, applying, analyzing, synthesizing or evaluating information as components of CTA, as well as observation, experience, reflection, reasoning, and communication (Binker, 1992, p. 84). CTA involves an individual's use of reflective thinking skills to probe questions or problems before belief or action.

In order to acquire a clearer picture of the nature of CTA, several scholars' insights may be beneficial. Eight basic definitions and their implications for EFL are considered as follows in Table 1.

As suggested in Table 1, some features of CTA are particularly applicable in an EFL environment. Reflective CTA (Facione, 1990, 2011; McPeck, 1981) and rational thought (Siegal, 1988), which refer to being purposeful and self-regulatory (Facione, 2011), may be proposed as main features of CTA in EFL. Likewise, self-correcting, self-directed, self-disciplined, and self-monitored conduct are constituents of CTA in EFL (Clarke, 2019). CTA starts with identifying questions or problems (Paul & Elder, 2008), conceptualizing, applying, and then sequencing toward rational, skeptical, and unbiased analysis. Analysis in CTA should include sensitivity to context and considerations of specific circumstances to facilitate good judgement (Lipman, 1988, 1991). CTA processing en-

TABLE 1
Definition of CTA

Advocating scholar	Definition	Implication for EFL
McPeck (1981)	The skill and propensity to engage in an activity with reflective skepticism	Reflective skepticism
Paul (1982, 1989)	Disciplined, self-directed thinking which exemplifies the perfection of thinking appropriate to a particular mode or domain of thinking	Disciplined, independent thinking
Ennis (1987)	Reasonable, reflective thinking that is focused on deciding what to think or do	Reasonable, reflective thinking
Lipman (1988)	Skillful, responsible thinking that facilitates good judgement because it (a) relies upon criteria; (b) is self-correcting and (c) is sensitive to context	Relying on criteria, self-correcting, and being sensitive to context
Siegal (1988)	Thinking skills that appropriate moved by reasons	Thinking with reasons
Facione (1990, 2011) Facione & Facione (2007)	Reflective decision-making and thoughtful problem-solving about what to believe and do, heuristic analysis, offering evidence and evaluating the significance of the evidence.	Reflective thinking, problem-solving attitude Offering evidence and evaluating factual evidence. Proving a point, interpreting something means, solving problem
Halpern (1996, 1998)	Cognitive skills or strategies obtained with practices with a wide variety of problems in many different contexts in order to be learned and retained.	Providing a wide variety of problems in many different contexts
Paul & Elder (2008)	Continuous self-reflection Identifying questions worth answering, directing one's search in responding to those queries, developing a sense that knowledge is contestable and presenting evidence to support one's arguments	Art of questioning Self-reflection Identifying questions, developing a sense that knowledge is contestable, presenting evidence.

tails questioning (Paul & Elder, 2008), evaluating factual evidence, offering evidence, interpreting meaning, and evaluating information/knowledge (Facione, 1990, 2011) with effective communication (Walter, 1994). CTA further encompasses explanation of evidential, conceptual, methodological, criteriological, or contextual considerations (Facione, 2011) to discover the intersubjectivity of information/knowledge. CTA aims to reach answers or conclusions, solve problems, make good judgements, develop a sense that information/knowledge is contestable (Paul & Elder, 2008), which was encouraged for learners to become disciplined, independent, and autonomous thinkers and achieved successive results (Paul, 1982, 1989). To realize these features, particularly in EFL, providing a wide variety of problems in many different contexts (Halpern, 1996, 1998) is important. In EFL environments, the linguistic features of CTA are especially significant.

2. Linguistic Features: Rhetorical Device Analysis of CTA

CTA is a combination of logical and rhetorical skills (Reeder, 1984). Reeder insists that all arguments can be analyzed and evaluated based on rhetoric. Since rhetorical devices are linguistic features of English, using rhetorical organization must be considered in EFL/ESL (Cummins, 1981) and since learning and using language are concurrent activities in EFL, rhetorical device was successfully applied to EFL learners and enhanced their critical thinking ability (E. Kim, 2020).

Any rhetorical device is a choice of linguistic and structural aspects of a language used to influence readers/listeners/audience (Noor, 2001). Rhetoric, which is socio-culturally embedded in each language in unique ways, is used in languages worldwide, and since the rhetoric of a language is intertwined with socio-cultural contexts in sophisticated and subtle ways, EFL teachers should in-

roduce different rhetorical patterns at the same time their learners are endeavoring to master the language.

While hundreds of multifarious rhetorical devices have been identified and described over the centuries, in this study they are separated into two categories: rhetorical patterns of text or speech and rhetorical techniques, as suggested by E. Kim (2020).

1) Rhetorical Patterns of Text or Speech

Rhetorical patterns of text or speech such as, inductive/deductive organization, exemplification/illustration, narration, description, cause & effect, compare & contrast, process, problem & solution, chronological order, classification, definition, refutation, argumentation etc. (Meyer & Freedle, 1979), can be utilized in EFL speaking and writing. These patterns are categorized depending on their ease of acquisition as follows in Table 2.

TABLE 2
Recommended Rhetorical Patterns Depending on the Language Proficiency

Level of English proficiency	Recommended rhetorical patterns of text
Beginners level	Definition, narration, exemplification, chronological order, spatial order, procedures
Intermediate level	Classification, description, cause & effect, compare & contrast, illustration, problem & solution
Advanced level	Refutation, inductive/ deductive organization, order of familiarity, frequency, complexity, argumentation

At the beginner level, definition, classification, narration, exemplification, and description are rather easy to handle for learners with limited grammatical structure and vocabulary ability as suggested below ;

- a. Definition covers the key word, term, concept or expression from a dictionary, which is presented

first, followed by a detailed explanation of easier, alternative, new, or unique terms. A discussion of how, why this word appears in a text then ensues.

- b. Narration focuses on the use of a story or an anecdote about a person, an object, etc., and then moves on to why you want to talk about it, which may be the main point.
- c. Exemplification starts with a sentence followed with brief, specific examples.
- a. Chronological order describes the order of time in which actions or events happen from first to last or beginning to end.
- b. Spatial order focuses on space, moving from one location in a continuous and sequential manner such as from a door, a corridor, to a room, moving clockwise, left to right, down to up etc.
- d. Procedure offers a sequence of steps or stages of progressive performance, events, directions such as how to cook or how to recycle etc. It requires only simple sentences with appropriate conjunctions, presenting each step separately in order of first to last.

On the other hand, intermediate level learners who have been instructed in the first category of rhetoric and could manipulate grammar, vocabulary, and rhetorical patterns of texts in a more subtle, sophisticated manner, move on to the next level of difficulty, as follows.

- a. Classification starts with a simple sentence to explain something, such as giving directions to your school, moving towards picturesque details so readers/listeners can picture them.
- b. Description starts with a sentence of what is being described followed by a description of a location, person, actions, event, object, memory etc., with concrete, sensory details of sight, smell, taste, touch and feel.
- c. Cause & effect begins with reasons (causes) and evaluations and then moves on to results or consequences (effects).
- d. Compare & contrast starts with a sentence of what is being compared or contrasted and offers the similarities in comparison or differences in contrast or both with criteria and standards in terms of qualities, values, preferences etc.
- e. Illustration is a more complex version of exemplification, which is offered at the beginner level. It offers more detailed explanations of specific examples after presenting a sentence of what is being illustrated.
- f. Problem & solution starts with detailed problems along with the causes that led up to them followed by detailed solutions. This rhetorical pattern can be included in refutation and argument.

All rhetorical patterns of text presented in the beginner and intermediate levels can be used in refutation, argu-

mentation or deductive organization, so texts comprised of multiple rhetorical patterns can be offered in the advanced level. For instance, argumentation may begin with definition or classification and end with problem & solution, so at the advanced level it may be necessary to cover all rhetorical patterns of text as a review.

- a. Refutation can start with the opposing argument followed by reasons, explanations, or descriptions of its flaws which highlight the strength and validity of the counterargument. Facts and fairness appeal to the listener/reader/audience's ethos, logos, or pathos.
- b. Inductive/deductive organization: Inductive organization starts with detailed support and then a general statement, while deductive organization is in the reverse order; the text begins with a generalized statement followed details to support the argument.
- c. Order of familiarity, frequency, complexity: In this order, ideas are ordered from the most to least or least to most familiar, frequent, or complex.
- d. Argumentation can include all rhetorical patterns and devices described above to argue for or against a controversial issue such as abortion, gay marriage, death penalty etc. By utilizing all the appropriate rhetorical patterns or devices, the argumentative presentation is balanced, convincing, and considers intersubjectivity

Most of these rhetorical patterns can be taught in EFL classes by adjusting for difficulties of grammar and vocabulary in varying English proficiency levels. However, a difficulty lies in inductive and deductive development of arguments. Kaplan (1967) and Grabe (2017) noted a significant difference between Western and Asian text development. Western writing, the deductive pattern, requires a direct topic sentence at the beginning of each paragraph (Noor, 2001; Hinds, 1987). Asian writing, on the other hand, tends to develop inductively (K. S. Cho, 2003; Kubota & Lehner, 2004), which delays the introduction of topic and purpose. (Connor, 1996). Even though the linear deductive type, the Western writing pattern, is widely understood and accepted as the preferred English academic writing style, many Asian students have difficulty processing and expressing their arguments deductively.

2) Rhetorical Techniques

There are simply too many rhetorical techniques for EFL learners to cover. Therefore, this study classifies rhetorical techniques depending on their usability, applicability and fixability. Here, fixability means whether the technique is idiomatically fixed or not. When rhetorical techniques are idiomatically fixed, they may be mastered by frequent exposure or memorization. Since rhetorically concurrent phrases are culturally invented via metaphor, simile, analogy or allegory, EFL learners often transfer from their mother tongue, which causes misunderstand-

ing. Some example metaphors transferred from Korean including “A crow-tit tries to walk like a stork (= person who is more capable),” “a bird chest (a person who easily gets scared),” “eating crow meat (= to be forgetful)” may be misunderstood (J. Kim, M. Kim, & Lantolf, 2018). Similarly, allegory, a narrative in prose or verse in which a character, place, or event is used to deliver a broader message, may be understood only in a historically shared socio-cultural context.

Some fixed rhetorical techniques that do not allow for EFL learners’ creativity and manipulation are metaphor, simile, analogy, and allegory, according to E. Kim (2020), J. Kim, M. Kim and Lantolf (2018), as follows.

- a. Metaphor: boiling mad (= very angry), a breeze (= an easy task), a trophy wife (= a young attractive woman for a rich and successful older person), etc.
- b. Simile: as bold as brass, as bright as a button, as innocent as a lamb, as clean as a whistle, as clear as mud, as different as night and day, as thin as a rake, etc.
- c. Analogy: Life is like a cake. Finding a good man is like finding a needle in a haystack. Just as a sword is the weapon of a warrior, a pen is the weapon of a writer. Explaining a joke is like dissecting a frog, etc.
- d. Allegory: Animal Farm by George Orwell, The Lord of the Flies by William Golding, and Pilgrim’s Progress by Jon Bunyan.

On the other hand, rhetorical techniques such as alliteration, allusion, antanagoge, hyperbole, parallelism, euphemism, chiasmus, aporia, anaphora, and oxymoron offer more creative freedom.

- a. Alliteration refers to the recurrence of initial consonant sounds to emphasize intentions lyrically. For instance, “Can you keep the cat from the clawing the couch?” “Kim’s kid kept kicking like crazy.”
- b. Allusion is a short and indirect reference to an object, person, place, or concept of historical, political, social, cultural, or literary significance. For instance, “Don’t act like a Romeo in front of her,” Romeo is a reference of Shakespeare’s Romeo.
- c. Antanagoge places a negative point and a positive point in balance. For instance, “When life gives you lemons, make lemonade.” “lemons” are negative, and “lemonade” is positive.
- d. Hyperbole is used for extreme exaggeration. For instance, “I’ve told you to clean your room a million times!” “A million times” is exaggerated.
- e. Parallelism uses similar words, phrases, or clauses to show the same level of importance. For example, “My mother was busy doing the laundry, dusting the furniture, and washing the dishes. The underlined parts are in parallel.
- f. Euphemism is an agreeable word or expression substituted for one that is potentially offensive in terms

of bodily functions, sex, or death. Some instances are “a rest room” for toilet, “a lady of the evening” for prostitute, “to pass away” for death.

- g. Chiasmus is two or more clauses balanced against each other by the reversal of their structures grammatically and logically. For instance, “You forget what you want to remember, and you remember what you want to forget.”
- h. Aporia places doubt, dubitation, or skeptical remarks regarding a dilemma to garner a sympathetic response. For example, “To be, or not to be: That is the question.” was Hamlet’s skeptical response to dilemma.
- i. Anaphora is a deliberate repetition of the first part of the sentence. In the instance of “Every day, every night, in every way, I am getting better and better,” “every” is repeated to emphasize the progress.
- j. Oxymoron produces an incongruous, seemingly self-contradictory effect, as in “cruel kindness,” “awful good,” “deafening silence,” definite maybe,” or “make haste slowly,” when expressing an opinion that cannot occur together.

E. Kim (2020) demonstrated that teaching rhetorical devices has a positive and promising influence on CT of EFL learners. However, practicing rhetorical devices in EFL classes is not enough to enhance CTA. Fostering CTA involves planning and implementing appropriate strategic procedures throughout the EFL curriculum.

3. Strategic Procedures for CTA: PCIA-EIOR

As mentioned in the introduction of this study, many scholars have associated CTA with affirmative outcomes in EFL environments (H. Hwang, 2001; E. Kim, 2017, 2018a, 2018b, 2018c, 2018d, 2018e; H. Kim, 2015; S. W. Park, 2011; K. S. Sung, 2010), so CTA in EFL is feasible by developing strategic procedures that facilitate and assist EFL educators with appropriate teaching strategies, hands-on activities, and assessment methods (McDonald, 2007).

Strategic procedures for CTA entail cognitive dimensions of language learning in EFL environments. According to Facione (1990), the cognitive dimensions are (1) interpretation, (2) analysis, (3) evaluation, (4) inference, (5) explanation and (6) self-regulation. However, in his taxonomy, data collection, experience, observation, communication, and synthesizing processes are overlooked. These processes are necessary steps to promote language learning in EFL, so the current study proposes 8 strategic steps/procedures for CTA in EFL.

Different scholars have included various tasks for CTA. They include: clarification of CTA concepts and contexts (Perkins & Salomon, 1989); analyzing arguments (Facione, 1990; Halpern, 1998); stimulating the background knowledge of students (Mayer, 1983); making inferences (Paul, 1992; Willingham, 2007); judging or evaluating all factors of arguments (Case, 2005; Lipman, 1988, 1991); emphasizing the importance of metacognition (Halpern,

2003); solving problems or decision-makings (Willingham, 2007); interpreting and explaining (Facione, 1990), and asking and answering questions (Ennis, 1987). These tasks are included in strategic procedures for CTA, PCIA-EIOR, as presented in Table 3.

TABLE 3
Strategic Procedures for CTA, PCIA- EIOR

Step	EFL learners' tasks	Learner's performance
STEP 1. Probing	Probing problems	Reading Discussion
	Recognizing significance of issues	
	Identifying problems in contextual consideration	
STEP 2. Collecting	Identifying assumption of the argument	Reading Discussion Observation
	Render holistic associational judgments	
	Looking for a point of view in the argument	
STEP 3. Interpreting	Making basic inferences	Discussion Questioning Writing
	Collecting information	
	Searching data/knowledge/experience/observation	
STEP 4. Analyzing	Conceptualizing meaning of concepts	Discussion Using mind-maps Reading
	Categorizing concepts	
	Interpreting the arguments	
STEP 5. Evaluating	Classifying significance	Discussion Questioning Explaining
	Clarifying meaning	
	Comprehending the fact, situation, arguments	
STEP 6. Inferencing	Discovering implicit meanings	Discussion Questioning Explaining
	Applying the concepts	
	Breaking down the information	
STEP 7. Presenting	Analyzing argument, situations of both sides'	Writing Discussion
	Advantages and disadvantages	
	Synthesizing resources and perspectives	
STEP 8. Reflecting	Linking between the information and perspectives	Writing Discussion
	Evaluating arguments	
	Prioritizing the order of the most desirable perspectives	
STEP 9. Reflecting	Render criterion-based judgement	Writing Discussion
	Providing factual, unbiased evidence	
	Recognizing intersubjectivity	
STEP 10. Reflecting	Finding solutions or alternatives	Writing Discussion
	Inferencing cause and effects of the argument	
	Looking for evidence	
STEP 11. Reflecting	Providing factual evidence	Writing Discussion
	Presenting the conclusion	
	Constructing arguments against the other side	
STEP 12. Reflecting	Consider possible alternatives	Writing Discussion
	Reflecting the conclusion	
	Evaluating conclusions	
STEP 13. Reflecting	Assessing solutions and alternatives	Writing Discussion
	Self-examining	
	Self-correcting	

As the current study considers the unique circumstances of CTA in EFL, the process is slightly different from Angelo's (1995) proposal, which starts with conceptualizing, applying, analyzing, synthesizing, and evaluating information to reach an answer or conclusion. CTA may be acquired by the intentional application of rational, higher order thinking skills, such as analysis, synthesis, problem recognition and problem solving, inference, and evaluation (Angelo, 1995, p. 6).

The procedure presented in this study is composed of 8 steps – PCIA-EIOR – which are probing, collecting, interpreting, analyzing, evaluating, inferencing, presenting, and reflecting. The first four steps – PCIA – confront the issue, and the second four steps – EIOR – are the results of the first part. In each step there are tasks with specific modes of performance.

STEP 1, the probing step, aims at exploring questions, issues, or problems in given arguments by scanning or skimming a reading to determine what kind of further information is necessary for CTA. It is a process of discovering, determining or assigning meaning to certain words, sentences, or paragraphs. Learners discuss with other learners using open-ended questions and continued probing. This step lasts 10 minutes. Probing questions could be "What is the concept of a certain word?" "What did you understand from what we read?" "What can you judge from the given information?" "What information should we look for?" "What other perspectives are there in relation to the argument? In this step, primary probing questions may be generated by considering other possible perspectives of the argument. Thereafter, learners utilize open-ended questions and explore concepts and information for further analysis.

In STEP 2, the collecting step, the targets are to collect information/data/knowledge/ experience/observations to conceptualize and categorize. All the information is gathered from observation, experience, reflection, reasoning, or communication (Paul & Elder, 2008), considering several perspectives.

This step should be planned in a systematic way to monitor the process, responsibility sharing of collection roles, and authorization of resources. It could possibly take several hours, so it may be done as an assignment. This step offers EFL learners an opportunity for extensive reading. After collection is completed, information processing follows. To determine which side of an argument the information may support, learners need to categorize the information into several perspectives considered in STEP 1.

In STEP 3, the task is interpreting the collected information to understand its significance or meaning. In this step, EFL learners explore and interpret rhetorical devices, focusing on how they are used. In addition, the interpretation is applied to written messages, charts, diagrams, maps, graphs, verbal or non-verbal communications in order to decide what the information means in each argument

In this step, the interpretation considers several perspectives by contextualizing. From the same fact there can be different points of view, so it is crucial to determine the argument's perspectives, the perspective of the information as well as the participants' perspective. Contextualizing may offer views different from the presented argument. Contextualization considers historical, ethical, political, cultural, environmental considerations and specific circumstances (Rhodes, 2010). It is necessary to record the different perspectival interpretations.

STEP 4 analyzes arguments and collects information according to the several perspectives. Analyzing includes breaking down the information, applying the implicated concepts, synthesizing resources and perspectives, and linking information and perspectives. In this step, rhetorical analysis may be beneficial to identify the effects of rhetorical devices. The process explores the intention and purpose of each perspective, delving for the advantages and disadvantages. In this step, learners compare their interpretation in STEP 3, and identify the differences.

In STEP 5 the task is evaluating arguments in relation to the several perspectives considered in STEP 4, prioritizing the order of the most desirable perspective, and rendering criterion-based judgement. In this process, it is important to provide factual, unbiased evidence, while recognizing intersubjectivity. After evaluation, the process moves on finding solutions or alternatives.

In STEP 6, inference is utilized to identify specific evidence to reach a conclusion. Inference is an active performance that examines clues, evidence, and flaws in a problem-solution process. In addition, inference traces the motives, purposes, and intentions of all perspectives. Inference involves identifying and securing credible, relevant and logical evidence (Facione, 2015) based on the previous steps to check whether the conclusion is reasonable. This step requires the student to make logical assumptions and connections by inferencing from the explored information to propose a new conclusion. Inferencing questions are “What was the possible cause of the problem?”, “Why did we have this conclusion?”, “What elements might not the conclusion consider?”, “What are the perspectives to support the conclusion?”, and “Are there any alternative conclusions?”

In STEP 7, presenting the conclusion to the audience/listener/reader is especially important in EFL. This step offers opportunities for EFL learners to construct arguments considering intersubjectivity, as well as utilize rhetorical devices to construct counterarguments, and suggest possible alternatives. Additionally, this step requires EFL learners to use grammar, vocabulary, discourse, rhetorical devices, phonology and speaking, writing, and listening skills. Delivering speeches or presentations to an audience/listener/reader offers classroom dynamics and the experience of using language in a supportive and cooperative group atmosphere, which enhances learning and brings out the best in learners (Hadfield, 1995).

In STEP 8, the task is reflecting on the process. Reflection suggests that change is possible and perhaps warranted. In this step, CTA is distinctive from just acquiring and retaining information/knowledge; it requires consistent self-reflection (Paul & Elder, 2008; Facione, 1990). Reflection emphasizes disciplined, self-directed thinking about factors missing from the entire process (Paul, 1989). Norris and Ennis (1989) proposed five requirements for assessment: clarification, basic support, inference, advanced clarification, strategies and tactics. These requirements encourage EFL learners to reflect on and assess their linguistic ability.

Regarding CTA skills, different scholars have focused on tasks such as clarification of CTA concepts and contexts (Perkins & Salomon, 1989); analyzing argument (Facione, 1990; Facione & Facione, 2007; Halpern, 1998); stimulating the background knowledge of students (Mayer, 1983); making inferences (Paul, 1992; Willingham, 2007); judging or evaluating all factors of arguments (Case, 2005; Lipman, 1988); emphasizing the importance of metacognition (Halpern, 2003); solving problems or decision-making (Willingham, 2007); interpreting and explaining (Facione, 1990), and asking and answering questions (Ennis, 1987). These are included in strategic procedures for CTA, PCIA- EIOR, as mentioned above. It is important to note, however, that it may be necessary for EFL learners to practice before moving to the PCIA-EIOR steps.

One of the major skills contributing to enhancing and broadening CTA is writing in STEP 3, 7, and 8. Interpretative writing in STEP 3, persuasive and argumentative writing in STEP 7, and reflective writing in STEP 8 will improve students' CTA as well as their writing skills. In STEP 3, interpretative writing may be simple sentences or a paragraph or two, in which learners spontaneously express ideas in paraphrase. In STEP 7, the writing is more ordered and organized about a familiar topic with familiar vocabulary. Here the writing moves to higher levels of organization through understanding the topic from different perspectives. Students can practice rhetorical devices to apply what they acquire from the CTA process to other contexts (Pikkert & Foster, 1996). In STEP 8, reflective writing offers students the opportunity to make value judgments about their own CTA process, arguments, and perspectives.

4. Interactive Activities for CTA

Dressel and Mayhew (1954) suggest that CTA improves with mental activities. To embed CTA activities in EFL, this study frames activities such as: providing time to brainstorm through discussions, seeking alternative solutions, providing time to identify tasks and problems, providing opportunities to compare and contrast in discussion, and categorizing concepts, rhetorical devices, and perspectives in relation to the given argument, and finally, encouraging creativity and autonomy in every step of CTA. In EFL environments, interactive team activities develop communication, build teamwork skills, create cross-cultural and cross-national awareness, and importantly, instill intercultural effectiveness and sensitivity (Deardorff, 2006).

Interactive activities promoting intercultural sensitivity allow learners to recognize connections between individual perspectives and social contexts (Freire, 1997), as well as between learned and lived experience. Interactive activities encourage conversation, writing, the exchange of opinions, and problem solving, while performing analysis, synthesis and evaluation.

Morrison-Shetlar (2001) and Silberman (1996) support strategic approaches to learners' active experiences. Gari-

son, Anderson, and Archer (2001) and Bullen (1997) suggest triggering activities, such as computer conferencing, to stimulate discussion for CTA,

The following is a list of fun, dynamic, enjoyable activities that can be used as preliminary CTA activities to practice classifying information, gathering and evaluating factual evidence, making inferences, and forming judgments prior to PCIA-EIOR. The researcher revised and improved CTA activities adapted from Language Teaching Games and Contests (W. R. Lee, 1986).

- a. Classifying critical words:
 - ① List positive and negative adjectives
 - ② Think about an issue and choose related adjectives, add more adjectives with a dictionary
 - ③ Divide the class into two groups, one group says an adjective while the other group finds a noun that can be so described.
 - ④ Take turns, giving tips if necessary.
 - ⑤ Write an object to describe with adjectives in a minute paper.
- b. Classifying information of a job:
 - ① Make a list of sentences related to 5 jobs, such as a doctor, firefighter, policeman, judge, teacher.
 - ② Show the sentences one by one to classify who does that kind of work.
 - ③ Ask students to write sentences for each job on minute paper.
 - ④ Read the students one of the sentences and ask whose job it is.
- c. Fact or opinion:
 - ① Make a list of fact or opinion sentences
 - ② Ask the students whether they are fact or opinion
 - ③ Ask students to write fact or opinion sentences in a group deciding whether they are fact or opinion.
 - ④ Ask the class whether they are fact or opinion.
 - ⑤ Ask the class to write factual evidence for support on minute paper. Students hold up their hands and answer with factual evidences.
- d. Auction, evaluating the price:
 - ① Bring a product that they don't use and want to sell.
 - ② Put a reasonable price after listening to the owner's story in a group.
 - ③ Write down the price secretly and ask to write their reason for their bid on minute paper.
 - ④ Ask the class to guess the price
 - ⑤ Use ups and downs to the closest price in one minute.
 - ⑥ The closest prices are collected by the group. The highest amount is the winner.
- e. What do you infer:
 - ① Find an interesting but not well-known movie and note the time of a dramatic moment.
 - ② Show the drama to the students and stop just

before the dramatic moment.

- ③ Ask students to write what they infer the next scene. Ask the learners to write down a sentence of what they infer on minute paper.
 - ④ Share in a group and choose the most feasible answer and tell the class.
 - ⑤ The group giving the closest answer will be the winner.
- f. Dilemma consultation:
- ① Make possible dilemma cards such as something personal, social, economic, assuming it is real, but do not choose an embarrassing dilemma.
 - ② Distribute the cards to all the students. Ask them to write a sentence outlining the problem on minute paper.
 - ③ Each student recites the dilemma to the class as if it is their own dilemma.
 - ④ The other students offer suggestions, pointing out problems and possible solutions.

As Perkins and Salomon (1989) suggest, stimulating CTA activities comprise clarification, assessing evidence, inference, and strategy building. Activities a, b, and f include clarification of positive and negative adjectives, jobs, and dilemmas to classify, describe, and judge. In group work, students are empowered to exercise their cognitive ability to make judgments, determine a price, and consult by utilizing available evidence.

Another type of CTA activity is making inferences which involves the application of thinking skills such as induction and deduction. Activities c, d, and e foster inductive and deductive inferencing. Activity d requires both inductive and deductive inferences to guess a price based on the given information, while activity c utilizes inductive reasoning to infer whether given statements are fact or opinion.

The last type of CTA activity is evaluation based on perceptions of given information. Activity d and f are effective practice for evaluating or making judgements. Learners are required to evaluate a product to determine a price in activity d, and to make a judgement concerning a dilemma.

Angelo (1995) stressed the use of continuous classroom assessment for CTA as a method to monitor and facilitate learners' CTA. Writing a 'Minute paper' was suggested as an example of monitoring learners' CTA. The minute paper is utilized in the CTA activities mentioned above. However, the minute paper can also be utilized to ask questions such as "what was the most interesting thing you learned in today's class?" "What remains uppermost in your mind?" This can be useful to help teachers prepare for the next class. Teachers may not be the main players in CTA, but they are important facilitators aware that every moment of the class affects the learners' cognitive actions.

5. Teachers' Role in CTA

A significant part of CTA implementation in an EFL

class is the teachers' conception and belief in CTA, and accordingly, their role. A teacher's conception about the significance of CTA for language learning implies that he/she is aware of the intimate association between CTA and language learning. Teachers' belief regarding CTA influences all the instructions, methods, and activities in class. Teachers' motivation and creativity for CTA development have positive and direct implications that influence change in EFL classes (Al-Issa, 2010; E. Kim, 2017, 2018a, 2018c, 2018e). In addition, teachers' assumptions, experience in relation to CTA, as well as external conditions such as social context and the educational environment, are important for developing learners' CTA.

This section of the study focuses on the teachers' role in terms of establishing a cooperative learning environment, presenting CTA, asking critical questions appropriate to language proficiency levels, being a facilitator, and offering tutorials.

Johnson and Johnson (1999) posited that learning a language and enhancing CTA are best served if activities are undertaken in group work. With the sensitive support of teachers and timely feedback, learners engage more actively in CT. This is due to the social dimension in group work (Stahl, 2003). A teachers' role in sustainable CTA does not only occur in cooperative group learning but also in the teachers' social interposition for CTA. The construction of meaning, as in a society, may be established in a process of negotiation in group discussions with a dynamic exchange of CT (Prawat, 1989). By way of cooperative learning, learners reach collaborative knowing (Scardamalia & Bereiter, 1996), in which the group attains a similar level of CTA. Cooperative learning has been proven to result in higher cognitive achievement, better development of CTA, improved learners' self-confidence, and satisfaction (Cooper, 1995; Doymus, 2008; Johnson & Johnson, 1999; Lazarowitz & Hertz-Lazarowitz, 1998)

Cooperative learning requires an environment where learners are learning together. They support each other with peer tutoring to work toward a common goal, which increases self-confidence and satisfaction (Lazarowitz & Hertz-Lazarowitz, 1998; J. H. Lee, 2008). Cooperative learning also reduces the teachers' role to that of a team member, team coach, or facilitator. However, if conflict arises, the teacher intervenes by negotiating subtasks, delineating the responsibilities of group members, and eliminating competitive elements within the group. In sum, the primary role of teachers for CTA in a cooperative learning environment may include the following.

- a. Observation of the group to be fair
- b. Encouraging positive comments from each member in a group
- c. Promoting identical goal direction
- d. Informing students of the advantages of cooperative learning
- e. Scoring as a group, not individually

The teachers' role in presenting CTA tasks is meaning-

ful. According to McDade (1995), presenting open ended tasks leads learners toward active and safe discussion, allowing them to construct their own conclusions. CTA includes analysis, inference, and evaluation considered in socio-cultural contexts which may lead to different but well-reasoned conclusions. From the various conclusions, learners become aware of the intersubjectivity of arguments. In drawing their own conclusions, learners have an opportunity to examine whether arguments are valid and justifiable and if they are founded on factual evidence or sensible assumptions.

The teachers' role in asking questions is also crucial for CTA implementation in EFL. Questioning is an essential element of efficacious learning (Hannel, 2009), since it actuates the recall of related information and prior learning (Cotton, 1988; Tienken, Goldberg, & DiRocco, 2010). Particularly, higher level questioning encourages learners to engage in higher levels of CTA (Tienken et al., 2010), which may include the need to analyze, synthesize, evaluate, categorize, or apply concepts to arguments. Also, deliberate and organized questioning may motivate learners to examine the arguments' purposes, values, and credibility of evidence. This implies that strategic questioning encourages learners to further investigate arguments to obtain a deeper understanding.

The taxonomy proposed by Bloom, Englehart, Furst, Hill, and Krathwohl (1956), starting from knowledge to comprehension, application, analysis, synthesis, and evaluation, is a fundamental basis for teachers to prepare questions depending on the level of thinking, progress of the argument and level of learning. Questioning is used to urge learners to be inquisitive, to assess understanding, and determine when to move on to deeper cognitive processes in CTA, so questions should be purposefully designed (Peterson & Taylor, 2012).

In designing questions, the use of specific verbs is imperative. Verbs that teachers and learners can use are suggested by Dalton and Smith (1986) as follows in Table 4:

This study proposes questioning as a role for teachers with specific examples and learners' product in Table 5, based on Bloom et al. (1956).

TABLE 4
Useful Verbs Depending on the Progress Level of CTA

Progress level of CTA	Teachers' questions
Knowledge	describe, tell, list, relate, locate, write, find, state, name, etc.
Comprehension	explain, interpret, outline, discuss, distinguish, predict, restate, translate, compare, describe, etc.
Application	solve, show, use, illustrate, construct, complete, examine, classify, etc.
Analysis	analyze, distinguish, examine, compare, contrast, investigate, categorize, identify, explain, separate, advertise, etc.
Synthesis	create, invent, compose, predict, plan, construct, design, imagine, propose, devise, formulate etc.
Evaluation	judge, select, choose, decide, justify, debate, verify, argue, recommend, assess, discuss, rate, prioritize, determine, etc.

TABLE 5
Teachers' Role: Presenting Questions Depending on the Progress Level of CTA

Level	Teachers' questions	Learners' products
Knowledge	What is true or false...?	Making list showing true or false
	What is happening after...?	Making a timeline of events
	What is the meaning of ...?	Making meaning cards
	Can you tell me why...?	Finding list of reasons
Comprehension	How many/much ...?	Making a chart to show amount
	Can you paraphrase the event?	Paraphrasing
	Can you tell me a summary?	Summarizing
	What could happen next?	Inferencing the sequence of events
	Who was the key character?	Retell the event from the key character view
Application	What was the main idea?	Illustrating the main idea
	Can you classify ... by features?	Classifying according to the features
	What factors could you change?	Redesign a model of strategy
	Can you apply the new information?	Reconstruct a model to demonstrate a way
	What could you change?	Demonstrate changed ideas in new structure
Analysis	Can you apply this to where?	Design the strategy to other cases
	What could be the ending?	Design a questionnaire to gather information
	How was this similar to?	Conduct investigation to explore similarities
	How was this contrast to?	Make a family tree showing relationships
	What could be other possible results?	Make all arrangement listing up the steps
Synthesis	Can you distinguish...?	Constructing a graph to distinguish
	Can you design...?	Designing a building in writing or speaking
	Can you plan...?	Planning a campaign of...
	How can you deal with it, if...?	Devising a method to...
	Can you write a proposal to...?	Writing a proposal to...
Evaluation	Can you find possible solutions for?	Finding solutions of...
	Can you judge of ...?	Devising a list of criteria to judge...
	Can you think of cons and pros?	Conducting a debate on ...
	Can you defend your position?	Giving consulting about...
	What kind of person are you?	Delivering presentations about...
	What are effective ways to...?	Delivering advertisement about...

The questions presented in Table 4 may be used in reciprocal peer questioning as well. Questions from both teachers and peers act as an impetus for further discussion to enhance CTA.

For CTA implementation, the teacher's role may be like a conference organizer or facilitator. CTA implementation in class consists of learners' probing problems, issues, and flaws of argument, collecting relevant information, asking questions to each other, and discussing the issue. Teachers remain passive without direct intervention in the discussions, which is like conference-style learning (Underwood & Wald, 1995). Teachers may pose strategic questions to support the development of cognitive processes as suggested in section 3. Strategic Procedures for CTA, PCIA- EIOR.

Another teachers' role is to offer tutorials to assist with clarifying arguments, drawing responses to critical questions, defining key terms, questioning main assumption, analyzing the structure of arguments, and mediating conflicts. Teachers' tutorials have great impact on improving an individual learner's CTA, so questions should encourage sophisticated reasoning in terms of clarity accuracy precision, relevance, depth, breath, logic, significance, and fairness, Table 6 proposes teachers' questions adopted from Paul and Elder (2008).

TABLE 6
Teachers' Questions in Tutorials Adopted From Paul and Elder (2008)

Level	Teachers' possible questions
Clarity	Could you elaborate?
	Could you illustrate what this argument means? What could be some examples you can offer?
Accuracy	Can we check on whether this is true or not?
	Where did we find this information? How can we believe this information source is credible?
Precision	What are specific details of argument?
	What are some details unrelated to the argument? How can we check this data?
Relevance	How does this relate to the argument?
	Why is it related to the argument? How does it support the argument?
Depth	What elements disturb possible solution?
	What are complex parts of this argument? What are some parts not to be accepted?
Breadth	Are there other perspectives against this argument?
	What are weak or strong part of this argument? Who will support the weak part and who strong parts?
Logic	Does all of this make sense to all?
	Does the first part of argument fit in with the conclusion? What is the evidence of it?
Significance	What are more significant points to consider?
	What are all details to make the main idea more significant? Why is this point more important?
Fairness	Is this argument justifiable in context?
	What makes this argument fair? Is the purpose fair in the given the situation?

The questions, proposed above, are serviceable for teachers as well as learners, since they are a standard approach to any argument. However, in tutorials, it may be necessary for teachers to adopt more specific criteria. Particularly in tutorials, teachers may ask a more detailed set of questions to increase learners' confidence.

III. DISCUSSIONS

This study started by presenting definitions of critical thinking, and then, its linguistic features, strategic procedures, interactive activities and the teachers' role, as an approach to enhance CTA for EFL learners. In establishing CTA approaches for EFL, learners' active participation is the most significant factor. Learners' participation, as this study proposes, may allow for critical perspectives to a much greater extent than was expected in a number of other studies (H. Hwang, 2001; E. Kim, 2017, 2018a, 2018b, 2018c, 2018d, 2018e; H. Kim, 2015; S. W. Park, 2011; K. S. Sung, 2010).

On the other hand, the teachers' role is also significant. How to present critical perspectives, especially ones that deal with controversial issues, political and social problems, is closely related to language acquisition as well as CTA enhancement. Among the teacher's roles, a conspicuously significant point is addressing both practical activities of CTA and linguistic elements for CTA at the same time. By implementing a critical thinking approach in EFL, teachers are facilitators as well as a language teacher enhancing EFL learners' vocabulary and grammar. Future-preparing teachers encourage engagement in critical issues (Cooper, 1995; Doymus, 2008; Johnson & Johnson, 1999; Lazarowitz & Hertz-Lazarowitz, 1998; Underwood & Wald, 1995).

Most importantly, the study is based on the correlation between critical thinking ability and language sensitivity (Chaffee, 1985; Hammond, 1989; E. Kim, 2017). Implementing CTA in EFL may open opportunities to integrate the teaching of English with various topics in society. EFL teachers educate learners holistically when they incorporate CTA in their language teaching. The use of CTA prepares EFL learners to see various perspectives, consider other points-of-view, and identify challenges. CTA prepares EFL learners to face complex problems in society and personal life.

IV. CONCLUSION AND LIMITATIONS

The study investigated research related to CTA in order to implement it in EFL. The definition of CTA led to the development of a pedagogical proposal of CTA implementation that aimed to foster language competence and stimulate EFL learners' CTA. In relation to linguistic sensitivity of CTA for EFL, the study offered rhetorical device analysis, classified rhetorical development and rhetorical techniques depending on EFL learners' language

proficiency. Most significantly, the study proposed strategic procedures for CTA. PICIA-EIOR categorized 8 steps, (1) probing, (2) collecting, (3) interpreting, (4) analyzing, (5) evaluating, (6) inferencing (7) presenting, and (8) reflecting. The (1) probing, (7) presenting, and (8) reflecting steps were added for the unique environment of EFL to provide learners' dynamic classroom activities more related to language development, as the primary point in EFL classes (Hadfield, 1995). In addition, the study provided interactive CTA activities, in which EFL learner practice easy, enjoyable, and fun activities for initial CTA development. This is certainly an important factor to be considered in CTA implementation in EFL.

The teacher has another significant pedagogical role in CTA implementation. Teachers should not only teach the language, they should also be model critical thinkers in the target language (Cooper, 1995; Doymus, 2008; Johnson & Johnson, 1999; Lazarowitz & Hertz-Lazarowitz, 1998), since the linguistic features of CTA include complex elements of socio-cultural background that impose a strenuous work-out for EFL learners. This study further proposed that teachers establish a cooperative learning environment, present CTA in discussion without offering conclusions, ask questions appropriate to the learners' English proficiency level in each step, act as a facilitator, and conduct tutorials. It is true that CTA cannot be accomplished overnight, but this study proposes that English acquisition while developing CTA helps learners become more active, creative, independent, autonomous, and critical language users.

Finally, with respect to CTA implementation, the value of CTA integrated in EFL, as proposed as PICIA-EIOR, is effective to enhance learner's ability to deliver public speeches or presentations. EFL learners may linguistically and critically probe problems, collect relevant information, interpret, analyze, evaluate, infer, deliver presentations or speeches, and finally reflect on the whole process.

In hindsight, there are several improvements that could have been made. First, in order to establish a CTA approach for EFL, the study could have distributed a questionnaire and conducted interviews with EFL teachers and learners. However, this study was based on pilot studies in EFL, which provided collective support for a CTA approach in EFL. In addition, it could perhaps have been foreseen what factors of real implementation of CTA in EFL could be revised or reorganized. Lastly this study could not cover the kinds of controversial topics that might be appropriate for critical thinking materials. It would have been interesting to distribute a questionnaire on learners' preferred topics and possible critical perspectives. Since this study was based on previous research, the results only reflect researchers' results and points-of-view. Further studies might explore the actual use of CTA approaches in the EFL classroom.

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