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Manipulating Critical Thinking Skills in Test Taking

Mansoor Fahim

Department of Foreign Languages and Literature, Allameh Tabatabai Uinversty

Southern Allameh st., Tehran, Iran

E-mail: dr.mfahim@yahoo.com

Maryam Pezeshki (Corresponding author)

Department of Foreign Languages and Literature, Allameh Tabatabai Uinversty

Southern Allameh st., Tehran, Iran

Tel: 98-911-157-3700 E-mail: pezeshkimaryam@gmail.com

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Abstract

Critical thinking ability is a difficult concept to define. It involves reasoning and active consideration of what is received rather than a forthright acceptance of the ideas. It has been argued that when the focus of testing is the examination itself, the critical thinking ability of the learners cannot be boosted. However, different types and formats of tests can engage the learners in an active critical thinking when they are appropriately prepared. In this paper some of these tests used in the literature and the way they engage the learners in critical thinking activities are explained. The paper concludes that different tests of language can be manipulated so that they can engage the learners in critical thinking activities. Implications for teachers and test developers are also provided.

Keywords: Critical Thinking, The RACE Model, Test Taking

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"Nothing in all the world is more dangerous than sincere ignorance and conscientious stupidity."
(Martin Luther King, Jr. as cited in Facione, 2011)

1. Introduction

Critical thinking is a difficult concept to define and, more importantly, to use. Different scholars have given different kinds of definitions for critical thinking (for example, Dantas-Whitney, 2002; Facione, 2011; Lau, 2009) and have enumerated the processes used to think logically and critically (Nugent and Vitale, 2008). It involves reasoning and a deep consideration of what we receive rather than a forthright acceptance of different ideas.

Furthermore, critical thinking can be used in different fields of study. Language testing, in particular, can benefit from critical thinking activities by involving the learners in a process of *R*ecognizing the questions given to them while they *A*sk themselves about the information given in the test and then *C*ritically analyze different responses and *E*liminate those that are inappropriate. Although the RACE model has been used in nursing examinations by Nugent and Vitale (2008) to help involve the learners in a critical examination of the tests they took, no one has yet manipulated such a model for language specific tests. This paper is an attempt to explicate the model and its potential use for tests of language.

2. Critical Thinking

Everyone might know what critical thinking means but when asked to define it, they may not be sure how to give a precise definition. Critical thinking can be simply put in contrast to illogical or irrational ways of thinking (Facione, 2011). However, it cannot be equated with argumentative types of thinking or making criticisms (Lau, 2009). Critical thinking further involves reflective types of thinking; that is, thinking about the activities we do (Dantas-Whitney, 2002). The first definition may be that given by Dewey (1909, as cited in Fisher, 2001), father of the new tradition in critical thinking, who first called this notion "reflective thinking" and defined it precisely as an "active, persistent, careful consideration of a belief or supposed form of knowledge in the lights of grounds which support it and the further conclusions to which it tends" (p. 9). So instead of the simple act of receiving information and then readily accepting it, critical thinking involves an "active" process of thinking and analyzing what we receive (Fisher, 2001). In spite of this harbinger definition in the field, the most widely used definition is that given by Ennis who defined critical thinking as "reasonable, reflective thinking that is focused on deciding what to believe or do" (Norris and Ennis, 1989 in Fisher 2001). Critical thinking involves "purposeful, goal-directed" thinking in a process of making decisions based on evidence rather than guessing in a scientific problem-solving process (Nugent and Vitale, 2008). It involves logical reasoning, an ability to separate facts from opinions, examining things before accepting them, and asking oneself questions all the time (Wood, 2002). Furthermore, the process of formal reasoning in itself includes some processes. Nugent and Vitale (2008) explain some of the

processes of formal reasoning which incorporate critical thinking:

- **Problem Solving**—involves identifying a problem, exploring alternative interventions, implementing selected interventions, and arriving at the end product, which is a solution to the problem.

- **Decision Making**—involves carefully reviewing significant information, using methodical reasoning, and arriving at the end product, which is a decision.

- **Diagnostic Reasoning**—involves collecting information, correlating the collected information to standards, identifying the significance of the collected information, and arriving at the end product, which is a conclusion or nursing diagnosis.

- **The Scientific Method**—involves identifying a problem to be investigated, collecting data, formulating a hypothesis, testing the hypothesis through experimentation, evaluating the hypothesis, and arriving at the end product, which is acceptance or rejection of the hypothesis (p. 2).

In addition, the ability to make arguments is one part of being able to think critically (Lau, 2009). However, the arguments we make should be rational and sound in nature and be valid, too (Lau, 2009). Creative thinking also involves critical thinking. It is the "search for new facts and ideas which are put together in unusual and creative ways" (Schafersman, 1998). Critical thinking can so help in the evaluation of creative ideas in order to help us to be able to choose the best one and even change them if it is necessary (Lau, 2009). A critical thinker should possess all these capabilities. Moreover, Wood (2002) believes ideal critical thinkers are those who are

open minded; ready and eager to explore all ideas and all points of view, including those alien or opposed to their own. They are not threatened by opposing views, because they are looking for the truth; they know that if they have it already, it will stand any scrutiny. And if they don't have it, they are willing to drop the falsehoods they have, and embrace it (p. 1).

Critical thinking includes both cognitive competencies and personal competencies which interact with each other. Each of these competencies involves different components all of which are in constant interaction with one another. Cognitive competencies include having the ability to dissect, modify, analyze, interpret, examine, correlate, synthesize, summarize, understand, and make inferences and generalizations. Personal competencies, on the other hand, include being tolerant of ambiguity, thinking independently, having perseverance, being self-confident, inquisitive, motivated, risk taker, reflective, creative, and curious. (Nugent & Vitale, 2008). All these abilities and competencies are in constant interaction within each competency and among themselves.

Critical thinking ability is not something inborn; so it can be taught to the learners (Schafersman, 1991). It is a skill that can be improved and boosted by practice (Wood, 2002). All the capabilities needed for ideal critical thinkers could be identified and then used as a resource for teaching the skills to the learners to help them improve. Like any other skill which includes different sections, there is theory, practice and attitude involved in critical

thinking (Lau, 2009). That is, there are some principles involved in critical thinking which should be learned. However, knowing the theory alone in any skill is not enough. To be proficient, one needs to be able to put into practice what has been learned theoretically (Lau, 2009). By "attitude" Lau (2009) means being motivated to learn a skill and to practice it since those "who dislike challenges or having to find things out for themselves will find it difficult to improve their thinking" (p. 23). Educators may have the ability to think critically themselves but possessing the ability to think critically alone is not enough; they should be able to pass it on to others (Facione, 2011). Nevertheless, education usually involves filling the students' minds with knowledge without teaching them how to analyze that knowledge, evaluate it and arrive at a conclusion (Schafersman, 1998). Having knowledge is not usually enough for the students; the students should know how to use that knowledge in new situations in order to solve problems (Pikkert & Foster, 1996). In the past, educators taught the students the content areas under focus without directly telling them how to think (Fisher, 2001). In addition, traditional ways of teaching, which involved repetition and memorization of previously taught materials did not lend themselves to critical thinking (Pikkert & Foster, 1996). Critical thinking is a type of higher order thinking which is not the mere memorization of materials but the use and manipulation of those learnt materials in new situations (Pikkert & Foster, 1996). So, teaching and testing approaches in classroom can be changed in different ways to improve critical thinking abilities in the students (Schafersman, 1991). For example, writing, especially persuasive writing, can help improve critical thinking (Schafersman, 1998). Asking the students to write helps them "organize their thoughts" and think critically to persuade the reader or to make conclusions for the topic they are writing (Schafersman, 1991). Also the students may be asked to evaluate the written materials in order to answer some questions and reach a conclusion all of which involve logical reasoning and "making value judgments" (Schafersman, 1998). "Written dialogue journals" have also been used to promote critical thinking skills in the students (Dantas-Whitney, 2002). Even homework assigned for the students can maximize their ability to think critically (Schafersman, 1991). Critical thinking also helps in cognitive development of the students when they try to gather as much information as possible in order to solve a problem, to sort that information, and to look at a problem from different perspectives (Kathpalia & Heah, 2008). It involves reading and writing in a "problem-oriented and multidimensional" manner.

3. Critical thinking in test taking

Bell (2000) maintains that "assessment methods … which place a great emphasis on examination may not encourage the development of critical thinking skills" (p 2). The students may simply memorize the material in order to take the test. However, different types of tests themselves can promote critical thinking abilities in various ways.

Multiple-choice tests, for example, can be taken using critical thinking skills. This can be done by first trying to Recognize the information in the item, then **A**sk oneself what the question is asking, next try to **C**ritically analyze the options available and finally **E**liminate as many options as are possible. This is called the RACE model by Nugent and Vitale (2008) who used it in nursing examinations to promote critical thinking abilities in the learners. They believe the RACE model can be used to take different types of tests such as knowledge,

comprehension, application and analysis tests. Knowledge tests simply involve remembering facts and information which were studied before the test. This may be considered the easiest type of question since it involves memorizing all the information, repeating it to prevent forgetting the information, and recalling it during the test performance (Nugent & Vitale, 2008).

Comprehension questions, on the other hand, require understanding the new information, and changing it to one's own words in order to "interpret the essential components for their intent, corollaries, significance, implications, consequences, and conclusions" (Nugent & Vitale, 2008). It is one step further than knowledge type questions since it involves understanding and not just memorizing the given information. Application questions involve using the learned information in new types of situations, manipulating and changing the information, and making generalizations and conclusions in the new situation. The last type of tests, analysis test, involves analyzing the question into its constituent parts. It involves higher order critical thinking strategies. Nugent and Vitale (2008) believe to answer such types of questions, you first must examine each element of information as a separate entity. Secondly, you need to investigate the differences among the various elements of information. In other words, you must compare and contrast information. Thirdly, you must analyze the structure and organization of the compared and contrasted information to arrive at a conclusion or answer (p. 21).

All these tests in nursing involve the critical thinking skills of the learners by requiring them to recognize the given information, analyze that information, critically think about it and eliminate the inappropriate responses to the item. Hence, it is possible to make use of critical thinking skills while we are giving the learners some tests either to examine the amount of their knowledge or test their level of comprehension. But the focus here should not be the mere examination itself rather it should be boosting the learners' critical thinking skills.

The RACE model can also be used in language tests. Language tests have been classified in different ways and there are so many types of tests such as proficiency tests, placement tests and achievement tests. Proficiency tests aim to measure the general language knowledge the learners have. These tests can be used to make entrance or exit decisions for some institutions (Brown, 2005). An example is the Test of English as a Foreign Language (TOEFL) which is used in some universities to make decisions about the students. Proficiency tests are so general in purpose that they cannot be related to any specific program of study. Placement tests, on the other hand, group the students with the same level of language ability and help to have homogeneous groups of students. Such tests make the task of teachers easier since they let teachers focus on appropriate "problems and learning points" for each level (Brown, 2005). Placement tests are specific to a language program with a specific curriculum.

Language programs usually try to help the students to achieve a goal in learning the language and achievement tests are made for the purpose of testing how much a student learned at the end of the program (Brown, 2005). Such tests are geared to the content of the curriculum and so all the students are expected to take the test successfully.

These different types of language tests may be administered in different forms for different

language skills. For example, multiple-choice items could be used to test the vocabulary knowledge of the learners, grammar, reading comprehension, and listening comprehension or the cloze procedure may be used to test reading. Each of these forms involves critical thinking. While taking multiple choice tests, the students are required to read the stem and then choose from among the answers available to them. This process needs a critical evaluation of the stem and the choices and so it involves recognizing what is included in the stem and asking what information is needed in this item and then critically analyzing all the options available in the test to be able to eliminate the distractors and choose the correct answer. So multiple-choice language tests involve the students in a critical examination of each item and they help promote critical thinking abilities in the students. However, care should be taken when the aim is to produce tests which involve the learners in a critical examination. For example, when the choices in a test of reading are taken from the reading text itself without any changes, the students can easily find the answer without any endeavor by eliminating the distractors which do not match the sentences in the given text. The focus in preparing multiple-choice tests should be the involvement of the critical thinking skills of the learners and not simply the examination itself.

Cloze test is another form of test which can be used with the purpose of engaging the learners in a critical task. These tests involve the students in the task of filling in the blanks of an incomplete text with knowledge of what precedes the blank and what follows it. The students should have enough knowledge of the text and its purpose and be able to critically analyze the text in order to eliminate other probable answers for each blank slot and fill it with the appropriate response. The response can also be provided to the students together with three or four other distractors in a multiple-choice format. Here again the students should analyze each choice to be able to find the correct answer from among the given choices. Therefore cloze tests also engage the learners in a critical activity.

Production tests like writing and speaking involve critical thinking, too. Here, the students are required to recognize the information given in the question or the writing prompt, analyze it to understand what is given and what exactly they are required to do, critically think about the given information, and eliminate the possible responses or ideas. Argumentative modes of writing specifically can promote the learners' critical thinking abilities while they are involved in the task of persuading the reader to accept the idea which they think is true and eliminate the other competing ideas.

4. Conclusion

Critical thinking skills might be used in different types of tests, either comprehension or production tests. The students could be taught different skills in critically analyzing each test item and advised to use those skills while they are taking different language tests. The RACE model can be manipulated for tests of language although it was proposed for nursing examinations before. The steps to critically analyze test items are well suited to tests of language, too. The present paper can have some implications.

There are implications for language teachers and test developers. Language teachers are advised to make use of the RACE model in language testing and help the students improve

their critical thinking ability by practicing it in the classroom. They should give the students different test forms and then explain to the students in a stepwise fashion how they can reach to the answers by making use of the critical skills of recognizing the information in the stem, asking themselves questions about what the question is requiring them to do, critically analyzing the given information, and then eliminating the inappropriate responses for each item. Furthermore, teachers should not focus on examinations in the classroom with the purpose being just to test the students' knowledge. They should help the learners understand that the focus of the test they are taking in the class is simply to boost their critical thinking ability. This helps the students to benefit from the skill later in test taking or their final examinations. The students should be taught in a way that they can rely on their own resources for finding the answer to any questions. They should be given enough time to mull over each item before they can find the correct answer for it. The students should be further told that the mere memorization of the materials they are taught cannot help them answer the questions in their final examinations.

There are also some implications for test developers. Test developers should try to prepare items which engage the learners' critical thinking skills and do not simply ask for their memorized information. Tests which require the learners to find the information from the texts should be eliminated. Items should be prepared which ask for the higher thinking abilities of the learners and involve their critical thinking skills while taking the test.

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