

Critical Thinking Ability, L2 Vocabulary Knowledge, and L2 Vocabulary Learning Strategies

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ABSTRACT: The purpose of the present study was to identify any significant relationship between critical thinking ability, L2 vocabulary knowledge, and L2 vocabulary learning strategies of Iranian EFL learners. To this aim, the productive vocabulary levels test was administered to measure the learner's L2 vocabulary knowledge and observe homogeneity in terms of vocabulary knowledge. At the second stage, a critical thinking questionnaire was administered, along with a newly-developed L2 vocabulary learning strategies questionnaire; the questionnaires were developed to specify the critical thinking ability and L2 vocabulary learning strategies of the individual participants. The results of the statistical analysis revealed that Iranian EFL learners' L2 vocabulary knowledge was significantly related to their critical thinking ability. The participants' critical thinking ability also correlated positively with their self-assessed degree of determination, memorization, cognitive, and meta-cognitive strategies of L2 vocabulary learning. The study also showed a positive relationship between participants' L2 vocabulary knowledge and their L2 vocabulary learning strategies.

Keywords: critical thinking ability, L2 vocabulary knowledge, L2 vocabulary learning strategies

Over the last decade, the number of studies on learner traits and critical thinking ability has increased considerably (e.g., Dornyei, 2005; Ehrman, Leaver, & Oxford, 2003; Norton, 2001; Robinson, 2002). Ustunoglu (2004) believes that the current preoccupation with the learners and their needs is a natural outcome of a change from behavior-oriented theories of learning to cognition-oriented ones. The current paradigm shift magnifies the learner's performance rather than the teacher's performance. The effects of these cognitive approaches have been perceived in language teaching together with the reflections about the relationship between thinking and language. Teachers who want to promote thinking should attempt to observe the learners' knowledge-production behavior than their knowledge-reproduction performance. It is in the knowledge-production process that the critical, creative, and scientific thinking manifests.

Brookfield (1987) highlights the consciousness-raising function of critical thinking; this function facilitates cognitive processes in terms of awareness of moral, social, political, economical, and educational issues and encourages learners to take action. Brookfield believes that

when students learn to think critically, they develop an awareness of the assumptions under which they, and others, think and act. They learn to pay attention to the context in which their actions and ideas are generated. They become skeptical of quick-fix solutions, of single answers to problems, and of claims to universal truth. They also become open to alternative ways of looking at, and behaving in, the world. (p. ix)

Critical thinking, therefore, entails effective communication and problem-solving abilities, as well as a commitment to overcome their native ego-centrism and socio-centrism.

Second language learners, teachers and researchers have long realized the importance of vocabulary for improving language proficiency. Richards and Renandya (2002) see vocabulary knowledge as the core component of language proficiency, and they believe that it provides much of the basis for how well learners speak, listen, read, and write. According to these authors, lack of an extensive vocabulary repertoire and strategies for acquiring new vocabulary discourages learners from making use of language learning opportunities, such as listening to the radio, conversing with native speakers, using the language in different contexts, reading, or watching television.

Research on vocabulary in recent years has done a great deal to clarify the size of vocabulary the learners need to read both authentic and simplified materials and to process different kinds of oral and written texts, as well as the kinds of strategies learners use in understanding, using, and remembering words. Research findings indicate that learners need to have access to a minimum of 3,000 words to comprehend authentic texts (Laufer, 1992), and students wishing to study in English at the university level may need up to 10,000 words (Hazenberg & Hulstijin, 1996). In order to attain vocabularies of this size, learners need to equip themselves with learning strategies that will enable them to acquire the most frequent words to cope with the huge number of words they encounter in a second language.

Along the lines of the above argument, the present researchers tried to examine the relationship between critical thinking ability, L2 vocabulary knowledge, and L2 vocabulary learning strategies of Iranian EFL learners. Having this purpose in mind, the researchers formulated the following research questions:

1. Is there any statistically significant relationship between critical thinking ability and L2 vocabulary knowledge of Iranian EFL learners?
2. Is there any statistically significant relationship between critical thinking ability and L2 vocabulary learning strategies of Iranian EFL learners?
3. Is there any statistically significant relationship between L2 vocabulary learning strategies and L2 vocabulary knowledge of Iranian EFL learners?

Review of the Related Literature

Critical Thinking

The concept of critical thinking, which has attracted considerable attention over the past decades, has its roots in ancient Greek. The word critical, according to Paul and Elder (2008), derives etymologically from two Greek roots: "kriticos" (meaning meticulous judgment) and "kriterion" (meaning criteria). Etymologically, then, the word implies the development of "meticulous judgment based on criteria." The Webster's New World Dictionary (2003) defines the concept as "careful analysis and judgment." The entry further notes that "critical in its strictest sense implies an attempt at objective judgment so as to determine both merits and faults." When applied to thinking ability, the combination might provisionally be defined as a kind of thinking that explicitly aims at well-founded judgment by resorting to appropriate evaluative criteria to determine the true worth, merit, or value of something.

The 1980s witnessed a growing accord among the educationists who believed that education was the outcome of inquiry, learning, and thinking than the accumulation of disconnected pieces of information. By the decade's end, the movement that aimed to introduce critical thinking into the K-12 and post-secondary curricula had gained remarkable momentum (Facione, 1990). As a result of this movement, a panel of critical thinking experts set out a two-year research project using the Delphi Method to identify the essential skills and dispositions for good critical thinking.

In their response to the American Philosophical Association's Committee on Pre-College Philosophy, the panel defined the concept in terms of two dimensions: cognitive skills and affective dispositions. For these experts critical thinking was characterized as:

We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criterion-logical, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in

one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society. (Facione, 1990, p.2)

In a more recent conceptualization, Paul and Elder (2008), define critical thinking in terms of skills, intellectual standards, elements of reasoning, and intellectual traits or virtues:

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness. It entails the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue, assumptions, concepts, empirical grounding; reasoning leading to conclusions, implications and consequences, objections from alternative viewpoints, and frame of reference. Critical thinking in being responsive to variable subject matters, issues, and purposes is incorporated in a family of interwoven modes of thinking, among them: scientific thinking, mathematical thinking, historical thinking, anthropological thinking, economic thinking, moral thinking, and philosophical thinking. (p. 3)

L2 Vocabulary Knowledge

Vocabulary knowledge is a complex and multidimensional construct. However, it has often been conceptualized in terms of vocabulary size and vocabulary depth. According to Tseng and Schmitt (2008), it is obvious from a range of studies that certain vocabulary sizes are necessary to perform certain activities in language (e.g., Adolphs & Schmitt, 2003; Hazenberg & Hulstijn, 1996). The lexical requirements of English, for example, can be summarized as follows:

- 2,000–3,000 word families for basic everyday conversations (chat),
- 3,000 word families to begin reading authentic texts,
- 5,000–9,000 word families to independently read authentic texts, and
- 10,000 word families, a wide vocabulary, to allow most language use.

Vocabulary size, of course, is only one side of the story. Learners must be able to use the vocabulary they have. This can be considered the depth or quality of vocabulary knowledge. Because the quality of vocabulary knowledge increases gradually (Schmitt, 2000), it follows that learners will have different levels of mastery of individual lexical items. Nation (2001) conceptualizes this mastery as the knowledge of the different *dimensions* of words which include knowledge of the meanings, collocations, grammatical features, word parts, register and appropriate forms of the word.

L2 Vocabulary Learning Strategies

The definition of a vocabulary learning strategy stems from the concept of language learning strategy. According to Oxford (1993), the term learning strategy refers to “steps or actions taken by students to improve their own language learning” (p.67). Wenden not only defines learning strategy as the “learning behaviors learners actually engage in to learn and regulate the learning of a second language,” but she also refers to “what learners know about the strategies they use.” (Wenden, 1987, pp.6-7)

As far as a vocabulary learning strategy is concerned, Schmitt (1997) adopts Rubin’s (1987, p. 29) definition of learning as “the process by which information is obtained, stored, retrieved, and used” and extends it to a vocabulary learning strategy in the following way: “vocabulary learning strategies could be any which affect this rather broadly-defined process.” Based on the belief that the above definitions do not exclude but complement each other, Catalan (2003) adopts the following as a working definition for vocabulary learning strategy:

Knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken

by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode. (p.56)

One of the first attempts at categorization of vocabulary learning strategies was made by Stoffer (1995, cited in Schmitt, 1997). For the purposes of a large-scale study (involving over 700 learners), she designed a questionnaire (Vocabulary Learning Strategy Inventory or VOLSI) with 53 individual strategies grouped into the following nine categories:

- (1) strategies involving authentic language use,
- (2) strategies involving creative activities,
- (3) strategies used for self-motivation,
- (4) strategies used to create mental linkages,
- (5) memory strategies,
- (6) visual/auditory strategies,
- (7) strategies involving physical action,
- (8) strategies used to overcome anxiety, and
- (9) strategies used to organize words.

Gu and Johnson's (1996) study can be considered as another attempt toward the classification of vocabulary learning strategies. In this study, the researchers' major concern was the comparison of the frequency-use of the vocabulary learning strategies with learners' beliefs about vocabulary learning, level of learners' vocabulary development and learning success. The 91 statements of the Vocabulary Learning Questionnaire (VLQ Version 3) devised by Gu and Johnson corresponded to the following groups of strategies:

- (1) Meta-cognitive regulation (selective attention, self-initiation);
- (2) Guessing strategies (by using the existing knowledge/wider context or by using linguistic cues/immediate context);
- (3) Dictionary use strategies (for comprehension, extended strategies of dictionary use, strategy of looking up words in a dictionary);
- (4) Note-taking strategies (meaning oriented, usage oriented);
- (5) Memory strategies: rehearsal (using a list of words, oral repetition, visual repetition);
- (6) Memory strategies: encoding (associating/elaborating, creating mental linkages, visual coding, auditory coding, word structure, semantic coding, contextual coding); and
- (7) Activation strategies.

Schmitt (1997) also developed a questionnaire to study vocabulary learning strategies of English learners in Japan. The results of this research, according to Takač (2008), "are embedded in his proposal of a typology of

vocabulary learning strategies which is currently the most comprehensive typology of (exclusively) this subgroup of learning strategies.”(p. 67)

Schmitt extracted vocabulary learning strategies from Oxford’s (1990) taxonomy of general language learning strategies and categorized them into five basic groups of strategies, further divided into Discovery Strategies (used for initial discovery of a word’s meaning) and Consolidation Strategies (used for remembering words):

- (1) Determination strategies: used by an individual when faced with discovering a new word’s meaning without recourse to another person’s expertise;
- (2) Social strategies: involve interaction with other people to improve language learning;
- (3) Memory strategies (traditionally known as mnemonics): involve relating new words to previously learned knowledge, using some form of imagery or grouping;
- (4) Cognitive strategies: entail manipulation or transformation of information about words to be learned, although they are not so specifically focused on mental processing as memory strategies;
- (5) Meta-cognitive strategies: involve a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best ways to study.

Another vocabulary-learning-strategies taxonomy, proposed by Nation (2001, p.218) consists of three general classes of strategies (planning, sources, and processes) with eleven specific types of strategies:

- (1) Planning: choosing what to focus on and when to focus on it (choosing words, choosing the aspects of word knowledge, choosing strategies, planning repetition);
- (2) Sources: finding information about words (analyzing the word, using context, consulting a reference source in L1 or L2, using parallels in L1 and L2);
- (3) Processes: establishing knowledge (noticing, retrieving, generating).

The fundamental feature of this taxonomy is that the types of strategies refer to various aspects of vocabulary learning. In other words, this taxonomy separates the elements of vocabulary knowledge from vocabulary sources and learning processes.

To conclude, it is interesting to note that within the field of vocabulary learning strategies new specialized subgroups of strategies have recently been formed. A range of studies have been conducted to determine the specific strategies learners use in the Computer-Assisted Language Learning (CALL) and Internet-Assisted Language Learning (IALL). Segler, Pain, and Sorace (2001), for example, point out that the existing taxonomies for vocabulary learning strategies have been developed for traditional learning environments, and therefore tend to be incomplete in

terms of factors arguably important for vocabulary learning. Emphasizing the need for incorporating evaluation of vocabulary learning and vocabulary knowledge into taxonomy building, the writers of the present paper hope to compile a taxonomy that not only will be relevant to modern CALL and IALL environments, but also will help improve the existing classifications.

Method

Participants

A total number of 70 intermediate EFL students, 30 males and 40 females, majoring in English Literature, English Translation, and English Language Teaching at Arak Islamic Azad University served as the participants of the present study. These participants were selected out of 100 enthusiastic EFL students based on their performance on the vocabulary knowledge test. The average age of the participants was 24, ranging from 18 to 26 years of age.

Instruments

The following data-collection instruments were utilized in the present study:

1. The Productive Vocabulary Levels Test (PVL):

In order to determine the vocabulary knowledge of the participants in the study Laufer and Nation's (1999) PVL was used. The test consists of 90 completion-type items which samples 18 items at each of the 2000, 3000, 5000, University Word List (UWL), and 10 000 word frequency levels. For each item, a meaningful sentence is presented and the initial letters of the intended vocabulary items are provided. The rationale for providing the initial letters of each vocabulary item was to reduce the chances for the selection of the items that would be semantically appropriate in the given context but were from a different frequency level. Here is an example eliciting the word 'episodes':

The book covers a series of isolated epis_____ from history.

The PVL is a reliable (0.91 on KR21), valid (in that the levels distinguish between different proficiency groups) and practical (easy to administer, score, and interpret) measure of vocabulary growth which allows researchers to investigate other aspects of vocabulary knowledge and thus looks more effectively at breadth of vocabulary knowledge (Laufer & Nation, 1999). The time limit for completion of the test is 45 minutes.

2. The Critical Thinking Questionnaire (CTQ):

The CTQ consists of 30 statements that intend to explore what a person might or might not do when thinking critically about a subject. Developed by Honey (2000), the questionnaire aims at evaluating the three main skills of comprehension, analysis, and evaluation of the participants. Following the translation of the questionnaire from English into Persian that was carried out to guarantee full comprehension of the statements, the researchers conducted a pilot study to determine its reliability index.

The Likert-type CTQ is a reliable (0.93, using Cronbach's Alpha), valid (highlighted by the literature), and practical (easy to administer, score, and interpret) measure of critical thinking ability which allows researchers to investigate the learners' ability in note-taking, summarizing, questioning, paraphrasing, researching, inferencing, discussing, classifying, outlining, comparing and contrasting, distinguishing, synthesizing, inductive and deductive reasoning. The time limit for the completion of the questionnaire is 20 minutes.

3. The Vocabulary Learning Strategies Questionnaire (VLSQ)

The 60-item VLSQ was designed by the researchers based on Schmitt's (1997) taxonomy of vocabulary learning strategies which is one of the most comprehensive and practical taxonomies in the domain of L2 vocabulary learning strategies. According to Catalan (2003), the use of Schmitt's taxonomy for collecting data on vocabulary learning strategies has the following advantages:

- It can be standardized.
- It can be used to collect the answers from students easily.
- It is based on the theory of learning strategies as well as on theories of memory.
- It is technologically simple, which allows for ease in coding, classification, and managing the data in computer programs.
- It can be used with learners of different ages, educational backgrounds, and target languages.
- It is rich and sensitive to the variety of learning strategies.
- It allows comparison with other studies.

The Likert-type VLSQ is a reliable (0.91, using Cronbach's Alpha), valid (highlighted by literature) and practical (easy to administer, score, and interpret) measure of vocabulary learning strategies which allows researchers to investigate both the type and frequency of strategies used by L2 learners and thus looks more effectively at L2 vocabulary learning strategies. The time limit for the completion of the questionnaire is 35 minutes.

Procedure

At the first stage, the critical thinking questionnaire and the newly-developed L2 Vocabulary Learning Strategies Questionnaire (the Persian versions) were piloted using 50 EFL students at Arak Islamic Azad University. Following the administration of these instruments, necessary modifications were made based on the feedbacks received from the participants and experts. At the second stage, the PVLТ was administered to measure the L2 vocabulary knowledge of the individual participants. The results of the PVLТ were also used as the main criterion for the selection of the participants, as well as establishing homogeneity in terms of vocabulary knowledge and proficiency. And, at the last stage, the CTQ was administered, along with the VLSQ, to identify the critical thinking ability and L2 vocabulary learning strategies of the selected students.

The study began when the participants signed the consent form. The participants were assured that their scores on the vocabulary test and their answers to the questionnaire items would have no impact on the grades they would get at their regular university courses. The researchers also acknowledged that the collected information would only be used for research purposes. Before the questionnaire administration, the researchers spent some time explaining the items and encouraged the students to ask their questions to help eradicate possible ambiguities regarding the questionnaire. Students were also told that they should respond to the questionnaires without discussing the answers with their classmates because strategies differ from person to person. The students who finished responding to the items were then asked to write down any other strategies or skills that they had used but were not listed on the questionnaire items. The students were also required to leave their comments or questions as they went through the questionnaire items. This was done to minimize chances for distraction and turn students away from talking to their friends who had not yet finished answering the questionnaire items.

The next step was the data codification by means of the STATISTICA software. To this end, the results of the CTQ were correlated with those of the PVLТ and VLSQ to address the first and second research questions. In order to address the third research question, the correlation between the PVLТ and VLSQ was calculated.

Findings and Discussions

Tables 1 to 3 are presented to address and discuss the research questions, respectively.

Table 1. *Critical thinking ability and L2 vocabulary knowledge*

| Var. X & Var. Y | Correlations Marked correlations are significant at p < .05000 (Casewise deletion of missing data) | | | | | | | | | |
|-------------------|--|---------|--------|----------------|------|------|----|-----------------|--------------|--|
| | Mean | Std.Dv. | r(X,Y) | r ² | t | p | N | Constant dep: Y | Slope dep: Y | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| PVL | 16.61 | 6.24 | 0.75 | 0.56 | 9.26 | 0.00 | 70 | -7.58 | 7.23 | |

As illustrated in Table 1, there exists a significant relationship between critical thinking ability and L2 vocabulary knowledge. The coefficient of correlation between critical thinking ability and Productive Vocabulary Levels (PVL) test ($r= 0.75$) reveals that critical thinking ability exists and it influences the breadth and depth of EFL learners' vocabulary repertoire. In other words, those students who enjoy greater thinking ability obtain higher vocabulary scores. This is because of the fact that critical thinking ability enhances language and presentation skills. According to Lau and Chan (2009), thinking clearly and systematically can improve the way people express their ideas. In learning how to analyze the logical structure of the texts, critical thinking also improves comprehension.

Table 2. *Critical thinking ability and L2 vocabulary learning strategies*

| Var. X & Var. Y | Correlations Marked correlations are significant at p < .05000 (Casewise deletion of missing data) | | | | | | | | | |
|-------------------|--|---------|--------|----------------|------|------|----|-----------------|--------------|--|
| | Mean | Std.Dv. | r(X,Y) | r ² | t | p | N | Constant dep: Y | Slope dep: Y | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| Determination | 2.84 | 0.39 | 0.34 | 0.11 | 2.95 | 0.00 | 70 | 2.16 | 0.20 | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| Social | 2.26 | 0.58 | 0.15 | 0.02 | 1.28 | 0.21 | 70 | 1.80 | 0.14 | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| Memorization | 2.89 | 0.51 | 0.32 | 0.10 | 2.79 | 0.01 | 70 | 2.04 | 0.25 | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| Cognitive | 2.77 | 0.72 | 0.28 | 0.08 | 2.43 | 0.02 | 70 | 1.72 | 0.31 | |
| Critical Thinking | 3.35 | 0.64 | | | | | | | | |
| Metacognitive | 2.70 | 0.69 | 0.34 | 0.12 | 3.01 | 0.00 | 70 | 1.48 | 0.37 | |

Table 2 reveals that critical thinking ability is correlated positively and significantly with determination, memorization, cognitive, and meta-cognitive strategies of L2 vocabulary learning, but not with social ones. This means that critical thinkers tend to solve their learning problems independently (i.e., using their own capabilities) without recourse to others' expertise. This is owing to the fact that critical thinking promotes

creativity. Coming up with a creative solution to a problem, according to Lau and Chan (2009), involves not just having new ideas but these new ideas should be useful and relevant to the task at hand.

Table 3. L2 Vocabulary learning strategies and L2 vocabulary knowledge

| Var. X & Var. Y | Correlations Marked correlations are significant at $p < .05000$ (Casewise deletion of missing data) | | | | | | | | |
|-----------------|--|----------|----------|----------------|----------|----------|----|-----------------|--------------|
| | Mean | Std.Dv. | r(X,Y) | r ² | t | p | N | Constant dep: Y | Slope dep: Y |
| Determination | 2.84036 | 0.390466 | | | | | | | |
| PVL | 16.61429 | 6.244517 | 0.236288 | 0.055832 | 2.005267 | 0.048917 | 70 | 5.88101 | 3.778839 |
| Social | 2.25833 | 0.580376 | | | | | | | |
| PVL | 16.61429 | 6.244517 | 0.158524 | 0.025130 | 1.323963 | 0.189949 | 70 | 12.76241 | 1.705629 |
| Memorization | 2.89372 | 0.511946 | | | | | | | |
| PVL | 16.61429 | 6.244517 | 0.415195 | 0.172387 | 3.763505 | 0.000352 | 70 | 1.95938 | 5.064381 |
| Cognitive | 2.76905 | 0.718443 | | | | | | | |
| PVL | 16.61429 | 6.244517 | 0.250853 | 0.062927 | 2.136913 | 0.036205 | 70 | 10.57680 | 2.180348 |
| Metacognitive | 2.70068 | 0.688260 | | | | | | | |
| PVL | 16.61429 | 6.244517 | 0.262748 | 0.069036 | 2.245573 | 0.027985 | 70 | 10.17617 | 2.383885 |

Table 3 indicates that L2 vocabulary knowledge was also correlated positively and significantly with determination, memorization, cognitive, and meta-cognitive strategies of L2 vocabulary learning, but *not* with social ones. This means that EFL learners prefer independent learning of L2 vocabulary and tend not to interact with others in the process of L2 vocabulary learning. It is also apparent from Table 3 that L2 vocabulary knowledge was highly correlated with memorization strategies of L2 vocabulary learning. That is, in the viewpoint of Iranian EFL learners, memorization strategies are the most important and practical strategies of L2 vocabulary learning, with meta-cognitive strategies, cognitive strategies, and determination strategies lagging behind in importance and practicality.

Conclusion and Pedagogical Implications

An important goal of modern education, according to Ku (2009), is to teach the elements of critical thinking. Critical thinking equips students with the competency necessary to deal quickly and effectively with ever-accelerating changes of the new world. To develop such competency, students must go beyond textbook-knowledge absorption and learn to build up flexible intellectual skills involved in information-valued judgment, evidence-based evaluation, and reason-driven argument. Critical thinking is not only vital for students to perform well in school, but also needed in future workplaces, social and interpersonal contexts where appropriate decisions are to be made carefully and independently on a daily basis.

The findings of the present study revealed that critical thinking ability of Iranian EFL learners correlated positively and significantly with their L2 vocabulary knowledge, on the one hand, and their L2 vocabulary learning strategies, on the other hand. Paul and Elder (2005) relate learning and thinking by stating that “the only capacity we can use to learn is human thinking. It can be concluded that the utilization of critical thinking skills would help EFL students learn L2 vocabulary more effectively and profoundly.” (p.10)

This study encourages language teachers, syllabus designers, and materials developers to consider critical thinking as one of the effective elements for academic and career success. Incorporating critical thinking in course books results in educated students who are able to effectively apply critical thinking skills to their academic studies (Kealey, Holland, & Watson, 2005), to the complex problems that they face in their professions (Yeh, 2004), and to the critical choices they will be forced to make as a result of information explosion and other rapid technological changes (Oliver & Utermohlen, 1995).

Also, in the field of language teaching, there should be a shift towards the Strategies-Based Instruction (SBI). SBI is “teaching learners with an emphasis on the strategic options that are available for learning; usually implying the teacher’s facilitating awareness of those options in the learner and encouraging strategic action” (Brown, 2007, p.390). As language teachers seek to make the language classroom an effective milieu for learning, it has become apparent that “teaching learners how to learn” is crucial. Learner strategies, according to Brown, are the key to learner autonomy, and that one of the most important goals of language teaching should be the facilitation of that autonomy. Chamot (2005, p.123) further concludes that “explicit instruction is far more effective than simply asking students to use one or more strategies and also fosters meta-cognition, students’ ability to understand their own thinking and learning processes.”

When critical thinking becomes part of the ongoing education, it makes students become more successful and helps them successfully integrate with their society. Considering these benefits, it is important to provide opportunities for the promotion of critical thinking skills. Courses must be reorganized and students must be challenged to apply problem solving and critical thinking skills to their real lives.

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