Critical thinking and task-based learning: Are they compatible?

Pamararat Wiriyakarun
King Mongkut's University of Technology Thonburi

Abstract
Critical thinking has become mandatory in the nationwide curricula under the present educational reform. However, a number of EFL teachers and curriculum developers still seriously doubt whether this skill can be cultivated effectively. How can they develop their students' ability to express critical thinking skills while simultaneously improving their language learning skills? Some researchers claim that critical thinking only seems applicable within content-based instruction. This paper explores its compatibility with other types of pedagogical approach, such as task-based learning, to see whether this approach can promote critical thinking within EFL settings in Thailand.

Introduction

As the world has changed dramatically in the past few years, the government of Thailand has realized that the old educational system that has emphasized 'chalk and talk' pedagogy may no longer be appropriate and cannot cope with the changing situation. Consequently, the National Education Act was enacted in 1999, and since then there have been many attempts to revolutionize the existing educational system. Many educators and teachers believe that the heart of educational reform is the reform of learning. Therefore, the Office of National Education Commission (ONEC), in collaboration with the nation's leading scholars and researchers, have conducted research on learning theories. They found five crucial theories to be implemented in the classroom to develop teaching-learning process. These theories involve Happy Learning, Participatory Learning, Thinking Process Development Learning, Moral Value Development Learning and Aesthetic Value Development Learning. In other words, the current educational system aims at developing Thai people in all the following aspects: physical and mental health; intellect; knowledge; morality; integrity; and a desirable way of life. Thai people must be equipped with all kinds of knowledge, and they must know not only 'what' but also 'how' and 'why' (Kaewdang, 2000).

Rationale

Even though recent trends in EFL/ESL instruction have emphasized the importance of integrating thinking skills in the English language curriculum, little research on critical thinking has been conducted, but this research reveals that critical thinking can be combined effectively with content-based instruction (Davidson and Dunham, 1996; Fairgrieve and Walton, 1996). I am, however, unaware of any research that has reported on the compatibility of teaching critical thinking skills with a task-based approach in spite of the fact that, like content-based instruction, task-based pedagogy is regarded as one particular development within the broader 'communication approach' (Littlewood, 2003).

What is critical thinking?

McWhorter (1988) defines critical thinking as the careful, deliberate evaluation of ideas and information for the purpose of judging their merit or value. Two key aspects

of critical thinking are evaluating statements and evaluating persuasive materials. The former involves distinguishing between fact and opinion, evaluating different viewpoints, evaluating generalizations, testing hypotheses and weighing the adequacy of data and evidence. The latter is concerned with recognizing persuasive language, identifying biased and slanted writing and evaluating arguments.

Bloom's taxonomy of learning behaviors consists of six levels ranging from Knowledge, the lowest level, to Evaluation, the highest one. Each level relates to a higher level of cognitive ability (Bloom, 1956). The following table relates Bloom's Taxonomy with materials and situations suitable for each level of thinking (Wakefield, 1998).

Table 1: Bloom's levels, materials and associated behaviors

Bloom's level	Materials / Situations	Measurable behaviors
Knowledge	Events, people, newspapers, magazine articles, definitions, videos, dramas, textbooks, films, television programs, recordings, media presentations	Define, describe memorize, label, recognize, name, draw, state, identify, select, write, locate, recite
Comprehension	Speech, story, drama, cartoon, diagram, graph, summary, outline, analogy, poster, bulletin board	Summarize, restate, paraphrase, illustrate, match, explain, defend, relate, infer, compare, contrast, generalize
Application	Diagram, sculpture, illustration, dramatization, forecast, problem, puzzle, organizations, classifications, rules, systems, routines	Apply, change, put together, construct, discover, produce, make, report, sketch, solve, show, collect, prepare
Analysis	Survey, questionnaire, an argument, a model, displays, demonstrations, diagrams, systems, conclusions, report, graphed information	Examine, classify, categorize, research, contrast, compare, disassemble, differentiate, separate, investigate, subdivide
Synthesis	Experiment, game, song, report, poem, prose, speculation, creation, art, invention, drama, rules	Combine, hypothesize, construct, originate, create, design, formulate, role-play, develop
Evaluation	Recommendations, self-evaluations, group discussions, debate, court trial, standards, editorials, values	Compare, recommend, assess, value, apprise, solve, criticize, weigh, consider, debate

Why critical thinking?

Thinking skills are considered a very important factor affecting academic success at college or university. Students who use thinking skills in their learning tend to be more successful in meeting the demands and expectations of the university (McWhorter, 1988). Critical thinking is a type of thinking skill that university students need to be trained to do. Students can become proficient language users if

they can display critical thinking through the language (Muhammad Kamarul Kabilan, 2000). Students' achievement in language learning depends on the students themselves, the pedagogy and their teachers. It could be said that it is the teachers who determine the students' success or failure in both learning and practising critical thinking. Teachers' beliefs and attitudes towards pedagogy play important roles in students' perceptions of critical thinking.

What is task-based learning?

The term 'task' in task-based learning has been defined differently by several teachers and writers. For example, Williams and Burden (1997) viewed a task as 'any activity that learners engage in to further the process of learning a language' whereas Estaire and Zanon (1994) suggest a broader definition. They divide it into two subcategories: communication tasks that focus on communication and enabling tasks that focus on form. Many other teachers and writers make a clear distinction between tasks and exercises. Tasks involve communicative language use in which the learners' attention is focused on meaning rather than linguistic structures. Activities that focus upon and practise specific elements of knowledge, skills and strategies needed for the task are called exercises. Skehan's (1998) definition of task supports this distinction:

- meaning is primary;
- there is some communication problem to solve;
- there is some sort of relationship to real-world activities;
- task completion has some priority;
- the assessment of task is in terms of outcome.

In evaluating a task, three different perspectives should be taken into consideration: tasks as workplans, tasks in process and tasks as outcomes (Breen, 1989). In other words, a task evaluation can be done by investigating the various types of information: (1) information about how the task was performed, (2) information about what learning took place as result of performing the task and (3) information about the teacher's and the students' opinions about the task (Ellis, 1998).

What is the relationship between content-based instruction and task-based language teaching?

Carson et al. (1997) describe the relationship between content-based instruction and task-based language teaching and say that they are both based on the idea that real language learning is most likely to occur when the context of that learning is real and when the learners use their new language to fulfill 'real' communicative purposes. However, the two approaches are still different in terms of the selection of a curriculum organizing principle. For content-based instruction, the curriculum is organized around content whereas, for task-based language teaching, the curriculum is organized around tasks. Nevertheless, content plays a significant role in task-based language teaching. The content in a task-based approach is determined by the learning tasks. For example, if the tasks are academic in nature, such as writing essay exams, doing lab reports, participating in class discussions, content should be selected to maximize the opportunities to master these specific academic tasks.

The connection between content-based instruction and task-based language teaching may pinpoint the compatibility of teaching critical thinking skills with a task-based approach. Furthermore, the main characteristics of a task, particularly one that

involves collaborative learning and problem solving, may harmonize with teaching critical thinking skills.

Purpose of the study

In Thailand, thinking skills are becoming a recognized and accepted part of the school and college curriculum such as the innovative EFL curriculum at King Mongkut's University of Technology Thonburi (KMUTT). The Department of Language, School of Liberal Arts, include thinking skills in several tasks of English foundation courses to foster thinking and encourage students to understand and realize the importance and nature of thinking. However, there seem to be some doubts about the effectiveness of the tasks and the relationship of teaching of critical thinking and task-based learning. This research was, therefore, conducted to find out if there is compatibility between teaching critical thinking skills and a task-based approach by examining teachers' perspectives on teaching critical thinking in the language classroom and students' perceptions of the example task used to promote critical thinking.

Methodology

The subjects of this research were six English teachers of the Department of Language, School of Liberal Arts, who taught LNG 103, a foundation English course for undergraduate students that includes an Experiment task (described below), and eighty-five students who took the course in semester 2 of the academic year 2002. Two sets of questionnaires, a teacher questionnaire and a student questionnaire, were used as research tools (see, respectively, Appendix 1 and Appendix 2). The teacher questionnaire was open-ended and concerned with teachers' attitudes towards teaching critical thinking in the EFL classroom and their reports on how they taught it in the 'real' situation. The student questionnaire inquired about students' perceptions and preferences towards the Experiment task. This task was designed to give students the chance to practice thinking critically and logically by conducting simple experiments, for example, cutting onions without their eyes watering, throwing eggs without breaking them, and making the most efficient paper aeroplane.

Experiment task

Time: 4 weeks (8 lessons = 8 steps)

Objectives: 1. To give students the chance to practice thinking critically and logically
2. To have students carry out an experiment to reveal their thinking
3. To analyze the results in order to conclude the findings
4. To write a report of the whole research and experiment

Assessment: 1-minute presentation 2 %
Written report 10%
Oral presentation of the completed experiment 8%

Procedures

Step 1

Teacher leads a discussion regarding kinds of experiments students used to conduct in science subjects. Teacher gives an example of simple experiments such as finding ways to prevent eyes from watering when slicing onions. Each student must think of the topic he wants to work on for his experiment and prepare to give a one-minute presentation of his idea in the next lesson. Teacher explains some constraints of the task. For example, the experiment must:

- be practical and simple;
- be concluded in concrete observations and results;
- not use hazardous materials;
- not use any equipment borrowed from any laboratories or departments;
- not be concerned with any serious science from other courses;
- not be on things that people already know.

Step 2

Each student gives a one-minute presentation of his idea. Teacher writes on the board all the topics of the students' experiments. Students form groups of four and each group discusses and chooses one topic from the list. Each group must work on a different topic. Teacher tells students to find between two and four sources of information that can be used to explain the theory underlying their experiments. Teacher must explain that, even though their experiments must not be related to any 'serious sciences' from other courses (so as to prevent students copying the ideas of existing experiments), there must be some theories that can explain the rationale and result of their experiments.

Step 3

Teacher shows some model versions of how to write the methodology of the experiment. Students write the first drafts of their methodology consisting of 3Ms (materials, method and measurement).

Step 4

Teacher provides guideline questions for peer feedback. Students swap groups and discuss each group's drafts. Then students re-group and revise their drafts. Students are assigned to do their experiment outside class and bring their notes on results of the experiment for group discussions in the next lesson.

Step 5

Teacher provides a series of questions for their discussions. Students remain in the same groups and discuss how to analyze the results. When each group finishes their discussion, teacher walks around monitoring and then gets feedback from each group.

Step 6

Students study the format and the expressions of report writing and learn how to write each part, especially the review of literature and results of the experiment.

Step 7

Each group writes their report, which is composed of the following required elements: Introduction, Review of Literature, Methodology, Results, Conclusion, and References.

Step 8

Each group gives a presentation on their experiment and hands in their written report.

Findings

Teachers' attitudes

All of the teachers in this study admired the instructional usefulness of critical thinking skills and realized the importance of critical thinking in English language teaching. They also suggested that critical thinking should be taught in every subject in order to train our students to become critical thinkers. Some viewed it as a necessary skill for an informed society. For the Experiment task, which aims at promoting students' critical thinking, most teachers stated that they could teach critical thinking through this task by using different methods such as identifying

problems, testing hypotheses, and evaluating results. Surprisingly, one teacher answered that students did not learn critical thinking through this task.

Students' perceptions

More than half of the students revealed their preferences toward the Experiment task (61.17%); 22.35% of the students reported that they liked it very much; 14.11 % said they neither liked nor disliked it; only 2.35% of them said they did not like it. However, almost all students (99%) accepted that the Experiment task was useful: 48.23% thought it was very useful; 41.17% considered it fairly useful; and 10.58% said it was extremely useful. Moreover, the majority of the students revealed that they thought this task was very useful for their academic studies and could be applied in their real-life situations. In doing this task, students reported they learned how to work cooperatively and practiced thinking skills such as reasoning, problem-solving, creative thinking, decision-making, determining the relevance and validity of information, and finding and evaluating solutions or alternative ways of treating problems. Also, a large number of students agreed that the Experiment task helped them improve their English proficiency because they could practice the four skills as well as grammar while working on this task. Besides, many students viewed the Experiment task as fun and thought it could broaden their knowledge of science. However, some drawbacks were also mentioned. For example, some students preferred to work in a smaller group or individually. Some said that they wanted to work on a more serious scientific experiment because they had faced difficulty in finding theories to support their experiments. Some asked for more practice on presentation skills.

Conclusion

Interestingly, although the teaching of critical thinking through a task-based activity in the EFL classroom yielded rather positive results, some surprising findings concerning teachers' and students' unclear understanding of the teaching and learning of critical thinking skills show that orientation, for teachers and students alike, is still needed for fostering critical thinking in the classroom. If teachers have a profound understanding of critical thinking and use appropriate strategies for teaching critical thinking skills, the students' ability to think critically will be enhanced.

References

Bloom, B. (1956) *A taxonomy of educational objectives. Handbook I: Cognitive domain*. New York: Mckay.

Breen, M. (1989) The evaluation cycle for language learning tasks. In R. Johnson (ed.) *The second language curriculum*. Cambridge: Cambridge University Press.

Carson, J.G., Taylor, J.A. & Fredella, L. (1997) The role of content in task-based EAP instruction. In Snow, M.A. and Brinton, D.M. (eds.) *The content-based classroom: Perspectives on integrating language and content*. New York: Longman.

Davidson, B.W. & Dunham, R. (1996) 'Assessing ESL student progress in critical thinking with the Ennis-Weir critical thinking essay test.' Paper presented at 21st International Conference of the Japan Association for Language Teaching and 16th International Conference on Critical Thinking and Educational Reform.

Ellis, R. (1998) The evaluation of communicative tasks. In B. Tomlinson (ed.) *Materials development in language teaching*. Cambridge: Cambridge University Press.
Estaire, S. and Zanon, J. (1994) *Planning classwork: A task-based approach*. Oxford: MacMillan Heinemann.
Fairgrieve, S. & Walton, N. (1996) Improving higher order thinking skills in language arts. M.A. Project, Saint Xavier University.
Kaedang, R. (2000) Learning for the new century. On-line. Internet. Available: http://www.edthai.com/reform/dec16a.htm.
Littlewood, W. (2003) Task-based language teaching: Principles and practice. *The ACELT Journal*.7(1), 3-12.
McWhorter, K.T. (1988) *Study and thinking skills in college*. Glenview, Illinois: Scott, Foresman and Co.
Muhammad Kamarul Kabilan, A. (2000) Creative and critical thinking in language classrooms. On-line. Internet. Available: http://iteslj.org/Techniques/Kabilan-Critical Thinking.html.
Skehan, P. (1998) *A cognitive approach to language learning*. Oxford: Oxford University Press.
Wakefield, D.V. (1998) Critical Thinking. On-line. Internet. Available: http:// www.lgc.peachnet.edu/academic/educatn/Bloom/critical_thinking.htm.
Williams, M. & Burden, R.L. (1997) *Psychology for language teachers: A social constructivist approach.* Cambridge: Cambridge University Press.

Appendix 1: Teacher questionnaire

Research topic: Critical thinking and task-based learning: Are they compatible?
Objectives: 1. To find out teachers' perspectives on teaching of critical thinking in the task-based English language curriculum at KMUTT
2. To investigate teachers' techniques in teaching of critical thinking in the task-based English language curriculum at KMUTT
Explanation: This questionnaire has two parts: Part 1 surveys teachers' perspectives on teaching of critical thinking in the task-based English language curriculum at KMUTT; Part 2 asks teachers how they teach critical thinking in the task-based English language curriculum at KMUTT using an Experiment task as a case study.

Part 1

1. Do you think that critical thinking can be taught in the English language classroom?

……
……

2. Do you think that teaching of critical thinking in the English language classroom is vital?

……
……

3. Do you think that teaching of critical thinking can be done in the task-based English language curriculum at KMUTT? (If your answer is 'no', you don't have to do the rest of the questionnaire.)

……
……

4. What tasks in the task-based English language curriculum at KMUTT do you think can be used for teaching critical thinking?

……
……

Part 2

Explain briefly how you teach critical thinking in the Experiment task of LNG 103.

……
……
……

Give any other comments on the teaching of critical thinking (if any).

……
……
……

Appendix 2: Student questionnaire

Research topic: Critical thinking and task-based learning: Are they compatible?
Objective: To find out students' perceptions and preferences of the Experiment task used to promote critical thinking

---

1. How much do you like the Experiment task?

☐ Extremely ☐ A lot ☐ Neither like nor dislike
☐ Somewhat ☐ Not at all

2. Do you think the Experiment task is useful? (If your answer is 'no', you don't have to do the rest of the questionnaire.)

☐ Yes ☐ Don't know ☐ No

3. In your opinion, how useful is the Experiment task to you?

☐ Extremely useful ☐ Very useful ☐ Fairly useful
☐ Somewhat ☐ Not at all

4. In your opinion, to what extent is the Experiment task useful to you?

……
……
……

5. Do you think that the Experiment task should be improved? How?

……
……
……

Pamararat Wiriyakarun is a lecturer in English at the Department of Language, School of Liberal Arts, King Mongkut's University of Technology Thonburi. Her interests include material development, task-based learning and learner autonomy.