Critical thinking within the ESP context

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Abstract
This paper considers the implementation of critical thinking in the ESP course which can help students bringing positive changes in the way they think and expand the horizons of their knowledge. It offers a possibility for developing an effective course curriculum to achieve desired learning outcomes. The ability to think critically and apply cognitive skills to solve real-world problems is essential for success in today's globalized and competitive world. Therefore, it is important for education to reconstruct traditional teaching principles into modern education strategies and provide a basis for a democratic transformation of education in the era of global growth and innovations. With critical thinking skills students will be prepared to become successful collaborators, good critical and creative thinkers, proficient communicators, effective problem solvers and career experts. By utilizing innovative pedagogy to support teaching and learning goals, students will be more likely to achieve their full potential and have their voices heard. For the purpose of the study, a questionnaire method on students' attitudes (opinions and reactions) towards the significance of critical thinking in the ESP classroom has been developed. Results of the study reveal that students have very positive attitudes towards critical thinking integrated to foreign language courses. In fact, they are highly positive in their beliefs about benefits and usefulness of using critical thinking in the classroom.

Key words: critical thinking, ESP, learning objectives, questionnaire, students' perception

Introduction

ESP courses should follow the trends of a global society and provide students with a successful model of learning as an important aspect for success in the 21st century. The paper examines critical thinking in the ESP course and offers a possibility for developing an effective ESP course curriculum to achieve desired learning outcomes. The implementation of critical thinking can help students bring about positive changes in the ways they think and expand the horizons of their existing knowledge (Shor, 1995).

It has become clear that the 21st century classroom needs students to face real-world problems that engage them in higher-order thinking skills – creativity, innovation, communication, collaboration, critical thinking and problem solving (Jonassen & Reeves, 1996). Rote learning and memorization are no longer appropriate for those who are hungry for new, meaningful knowledge (Marin & Halpern, 2011). Traditional principles of teaching and learning need to be reconstructed into modern education strategies and principles and 'create possibilities for social awareness and action' (Benesch, 1993, 2001).

Employers value employees who can solve complex problems, communicate effectively, and think critically (Gokhale, 1995). It is worth noting that with these skills which are essential to learning (Elder & Paul, 2005) students will become successful collaborators, good critical and creative thinkers, proficient communicators, effective problem solvers and career experts.

On Defining Critical Thinking

To address these challenges an innovative approach to learning and teaching (Boyce, 1996) focuses on skills of problem solving, thinking critically, effective collaboration and teamwork, and

effective communication within the ESP context. "Critical thinking can provide you with a more insightful understanding of yourself. It'll offer you an opportunity to be objective, less emotional, and more open-minded as you appreciate others' views and opinions. By thinking ahead, you'll gain the confidence to present fresh perspectives and new insights into burdensome concerns.

Critical thinking is a purposeful, self-regulatory judgment, which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological or contextual considerations that judgment is based upon (Facione, 1990). The cognitive skills list includes: interpretation, analysis, evaluation, inference, explanation and self-regulation, along with sub-skills under each of these headings.

Critical thinking is "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered from, or generalized by, observation, experience, reflection, reasoning or communication, as a guide to belief or action" (Scriven and Paul, 2001). Critical thinking is used to describe a way of bringing deeper analysis to problem solving or textual understanding, a way of developing more critical distance (Pennycook, 2001). Critical thinking as 'a socially constructed concept' (Atkinson, 1997) needs imagination where students and teachers practice anticipating a new social reality (Shor & Freire, 1987).

Freire (1972) encouraged students' ability to think critically which allows them "to recognize connections between their individual problems and experiences and the social context in which they are embedded". To think through the content of a subject analytically and critically means to function effectively in a rapidly changing world. Thus, only conscious learning and teaching process with the focus on critical thinking skills can help the student achieve positive results.

Critical thinking is related to transformative pedagogy (Giroux 1997; Benesch, 1993). Ensuring that critical thinking is well defined in the course will help students face crucial decisions in education and in life. Critical thinking skills will help students be more inquisitive, systematic, judicious, analytical, truth seeking, open-minded, and confident in reasoning (Facione, 1998). When we think critically about a given topic, we are forced to consider our own relationship to it and how we personally fit into the context of the issue (Brookfield, 1987).

Critical approaches to ESP explain that apart from fulfilling the main students' requirements to develop enough language to transmit messages, there is not enough encouraging students and teachers engaged in the activity of critical thinking. Moreover, critical thinking is used to describe a way of bringing more rigorous analysis to problem solving or textual understanding (Pennycook 2001). Critical thinking needs imagination where students and teachers practice anticipating a new social reality (Shor and Freire 1987). Freire (1972) encouraged students' ability to think critically which allowed them "to recognize connections between their individual problems and experiences and the social context in which they are embedded". To think through the content of a subject analytically and critically means to function effectively in a rapidly changing world. Thus, only a conscious learning and teaching process with a focus on critical thinking skills can help a learner achieve positive results.

Learning Objectives

We have designed the critical thinking course with a goal to develop students' ability in critical thinking, and to apply this thinking to address issues related to the professional context. At the end of the course students will be able to:

    i.   gather and assess relevant information;
    ii.   interpret information from different sources;
    iii.   ask and answer questions;
    iv.   use critical thinking skills that will help them in their future career;
    v.   come to reasonable conclusions;
    vi.   improve analytical and creative skills (Živković, 2013a);
    vii.   develop broader perspectives and deeper understanding of the world;
    viii.   participate in dialogue and reflect upon their own thinking;
    ix.   communicate effectively in the future work environment;
    x.   develop the ability to evaluate critical thinking from different viewpoints.

Research Questions

Based on the statement of the problem, this study demands following questions:

i.   What are students' attitudes of critical thinking approach in the ESP classroom?
ii.   How does critical thinking method work in the ESP course?

Methodology

This study considers the implementation of critical thinking in the ESP course at the Faculty of Civil Engineering and Architecture in Niš. What I have found in this study is that students have accepted a new approach to learning which works well in the course and enhances students' learning. For the purpose of the current study, a questionnaire method on students' attitudes (opinions, preferences and reactions) towards the significance of critical thinking in the engineering classroom has been developed. The impact of critical thinking on students' performance in English classes has been investigated. It is to provide teachers with some suggestions to make best use of critical thinking in their teaching with a view to enhance students' speaking skills.

Every semester civil engineering students are asked to complete an observation survey regarding their course experiences with ESP. These are anonymous observations which help to improve the quality of their learning.

Results

The results obtained in the study of the ESP course show that the majority of students perceive the classroom characteristics to be constructivist (non-traditional). The purpose of ESP is to prepare students to use a language to effectively communicate in real-life situations and cooperate with partners in professional fields. More specifically, the focus is on the practical experience and direct activity of students.

It means that constructivism is focused on learning activities such as problem solving, critical thinking, active and reflective application of knowledge (Driscoll, 2000). Constructivists combine methodologies in order to produce a successful and an effective model for developing productive proficiency and carry out the objectives of a course. ESP courses concentrate on empowering students to use English to communicate effectively with professionals, and preparing them for lifelong learning.

Students agree that it is a new experience and the best way to create new knowledge (Živković, 2011). None of the students expressed a strong negative attitude, while only a few of them prefers traditional methods as it is easier to handle in terms of learning. Therefore, taking all this into consideration, the results can be summarized as follows:

i.   Students report that these classes are more interesting and effective compared to traditional ones. Unlike the traditional classroom model (i.e. teacher-centered pedagogy), student-centered learning requires students to take an active role in forming new understandings (Dunlap & Grabinger, 1995).

ii.   Students comment they are active receptors of knowledge. Jonassen (1994) states that students must be given opportunities to be active in ways that will promote self-direction, creativity and critical analysis of problems requiring a solution.

iii. Students say that instead of memorizing the facts, they are encouraged to build their knowledge in order to provide permanent learning.

iv.   Students state that the knowledge acquired in the ESP course is strongly connected with their speciality. As has been well-known, ESP is "used to refer to the teaching of English for a clearly utilitarian purpose" (Mackay & Mountford, 1978), concretely, "for the professional needs of the learner (Crystal, 2003) in order to be able to function in specific contexts.

v.   Students report that they work in groups. ESP is clearly founded on the idea that students learn language in collaborative learning settings. Through collaboration and cooperation with fellow students, they are engaged in learning that is authentic, holistic, and challenging. Importantly, through collaboration with their colleagues, students develop skills that prepare them to deal with problems they will encounter in the workplace.

vi.   Students claim that discussions within the class provide them with the opportunity to practice sharing their experiences with their colleagues. They share ideas with each other and help each other build elaborate and refined knowledge structures (Dunlap & Grabinger, 1995).

This is contrary to traditional classroom settings in which learning is based on repetition of activities, and the subjects are guided by a textbook only.

vii. Students find the importance of developing successful communication to be prepared for future job. The main concern of ESP is "preparing learners to communicate effectively in the tasks prescribed by their study or work situation" (Dudley-Evans & St. John, 1998). Being able to communicate effectively is the challenge of the current global job market. Communicating and thus connecting with colleagues and business partners is an essential skill in career development.

viii. Students comment they are encouraged to engage in critical thinking by asking thoughtful, open-ended questions. Open-ended questions that probe and elicit expanded thinking and processing of information are useful for involving students in deeper learning (Cashin, 1995). The goal of critical thinking is to provide an environment where students construct their own knowledge and take the responsibility for their own learning. "In properly structured cooperative learning environments, students perform more of the active, critical thinking with continuous support and feedback from other students and the teacher" (Cooper, 1995). Classroom discussions can be enhanced with the use of such questions which can move students from a basic level of understanding of a concept to higher levels of thinking, which include critical, logical, reflective and creative thinking. The development of these skills is important for students to be able to solve the complex problems facing our society in the future.

ix. Students claim that discussions within the class provide them with the opportunity to practice sharing their experiences with their colleagues. In-class debates an active instructional strategy are a means to cultivate both critical thinking skills and oral communication skills (Kennedy, 2007). They will have to present new ideas or progress reports to their colleagues, or they will share the findings of their researches with their peers (Platow, 2002).

x. Students (future specialists) are aware of the fact that knowledge is not enough to be successful in today's world. They report they are given the chance to promote creativity and innovation. They are allowed to explore different perspectives and ways of looking at problems. The development of these skills is important for students to be able to solve the complex problems facing society in the future.

xi. Students comment that there are various ways of demonstrating their learning in the classroom. The potential benefits of such activities include greater class interaction and participation, increased interest in learning and improvement in communication. More specifically, rich learning activities help students think deeply about content in relevant and realistic contexts (Dunlap & Grabinger, 1995).

xii. Students state they enjoy these courses including activities which help their understanding of the importance of oral presentations. Students should be encouraged to search for solutions to real-world problems, and thus, they are engaged in transformative learning, leading to critical and analytical thinking which is essential for success in the *21st century*.

xiii. Students agree that the course helps them to reshape their thought process, allowing them to have a holistic view of situations from different points of view.

xiv. The teacher constantly challenges us to think critically. This makes the course interesting and at the same time challenging.

xv. Students think that they can learn new vocabulary related to their future job.

xvi. Finally, students agree that it is a new experience and the best way to create new knowledge.

All in all, students have very positive attitudes towards critical thinking integrated to foreign language courses. In fact, they are highly positive in their beliefs about benefits and usefulness of using critical thinking in the classroom.

To sum up, the research study presents a clear conception of what students perceive to be the quality of learning in the classroom. This study creates the opportunity for student voice "to express their opinions and make decisions regarding the planning, implementation, and evaluation of their learning experiences" (Rogers, 2005).

Students are responsible for taking an active role in the class by participating in discussions. Student-centered learning requires students to set their own goals for learning, and determine

resources and activities that will help them meet those goals (Jonassen, 2000). It is important for students to be engaged in active learning situations that require critical thinking skills (Brown & Kelley, 1986).

The role of the teacher is to create such learning. Students must be given opportunity to be active in ways that will promote self-direction, creativity and the critical analysis of problems requiring a solution (Jonassen, 1994). "Learning becomes a continuous, life-long process which results from acting in situations" (Brown et al., 1989).

Discussion

This study has reported on the effect of the critical thinking model in the ESP instructional environment. It presents a challenge to both students and the teacher. The challenge for the teacher is to provide a relevant framework for students upon which they construct knowledge and become active participants in the learning process. Importantly, the teacher is no longer perceived as the knowledge dispenser and decision maker. Instead, the teacher has become the facilitator of learning whose main task is to set goals and organize the learning process accordingly. It requires a teacher "whose main function is to help students become active participants in their learning and make meaningful connections between prior knowledge, new knowledge, and the processes involved in learning" (Copley, 1992).

Teaching students to be critical thinkers presumes an environment in which students are challenged without being frustrated, and in which they are focused on intentional learning (Jonassen, 1994). In such an environment students are actively involved in perceiving, analyzing and interpreting the world and reflecting on their interpretations.

The course trains students in both theoretical knowledge and practical skills essential to transformative pedagogy (Giroux 1997, Benesch, 1993) in the contemporary society.

The purpose of ESP is to prepare students to use a language to effectively communicate in real-life situations and cooperate with partners in professional fields. More specifically, the focus is on the practical experience and direct activity of students. Student-centered learning requires students to set their own goals for learning, and determine resources and activities that will help them meet those goals (Jonassen, 2000).

Jonassen (1994) states that learners must be given opportunities to be active in ways that will promote self-direction, creativity and the critical analysis of problems requiring a solution.

It has been observed by Kim et al. (1999) that students in the constructivist environment have more positive attitude towards learning as they share their experiences with their peers and the teacher, as well as they experience increasing discussions in the classroom. Brown (1996) has proved that constructivist learning environment helps students to work collaboratively and makes it easier to focus on a specific area useful for future work.

Course activities are designed to introduce teamwork skills, to encourage students in their learning, and to use processes to solve a problem and continue improving them (self-regulation). More specifically, students are encouraged to search for solutions to real-world problems, and thus, they are engaged in transformative learning, leading to critical and analytical thinking which is essential for success in the 21st century.

ESP courses allow students to interact with learning materials, and to explore and construct vocabulary and meanings (Živković, 2013b). The ultimate goal of today's ESP students is to acquire the ability to successfully communicate with others (professionals) in a meaningful and appropriate way. As stated earlier, ESP courses prepare students to use a language to communicate effectively in real-life situations and cooperate with colleagues in professional fields.

Obviously, to be prepared for global competitiveness, ESP students need to become critical thinkers who share their own ideas, listen to the ideas of others, summarize concepts by analyzing, justifying, and defending ideas, making decisions, solving real-world problems. Generally speaking, ESP students should know how to apply language in different situations (Živković, 2014).

The teacher should encourage communication through dialogue interaction aimed at mutual development and enrichment. As previously noted, the Socratic method, as a form of dialogic discussion, can be really efficient in ESP constructivist settings, as it can empower and support group learning based on either individual or a social constructivist approach. It highlights students' engagement in the discussion with a specific topic as a central focus. Consequently, students learn to

think critically by examining one another's ideas and questions in an attempt to create a better understanding, and "to have their voices heard and build on their previous experiences and interests to plan for their continuing growth" (Dewey, 1938).

There are different strategies to encourage active learning and enhance critical thinking. Teaching strategies that employ students' higher-order thinking skills lead to improved critical thinking skills (Hemming, 2000). Critical thinking can be encouraged by a use of questions that require students to analyze (examine learned information and gain an understanding of their organizational structure), synthesize (integrate previously learned information and its components into new concepts) or put parts together to form a whole, and evaluate (make judgments about information based on personal opinions) (Bloom, 1956).

The teacher involves preparing detailed guidelines, organizing groups, helping students to select topics, guiding their research providing feedback on the sequencing of ideas, and evaluating their performance (King, 2002). The teacher has become the facilitator of learning whose main task is to set goals and organize the learning process accordingly.

Students must be given opportunities to be active in ways that will promote self-direction, creativity and critical analysis of problems requiring a solution (Jonassen, 1994). "Learning becomes a continuous, life-long process which results from acting in situations" (Brown et al., 1989).

Conclusion

The ability to think critically in order to solve real-world problems within the profession is essential for success in today's globalized and competitive world (Živković, 2014).

Students' ability to think critically allows them "to recognize connections between their individual problems and experiences and the social context in which they are embedded" (Freire, 1972). To think through the content of a subject analytically and critically means to function effectively in a rapidly changing world. Thus, only a conscious learning process with a focus on critical thinking skills can help a learner achieve positive results.

By utilizing innovative pedagogy to support learning goals, students will be more likely to achieve their full potential and have their voices heard. In other words, "student voice is the active opportunity for students to express their opinions and make decisions regarding the planning, implementation, and evaluation of their learning experiences" (Rogers, 2005).

Dealing with the innovative instructional model, we end our discussion with Birenbaum's (2000) words that "successful functioning in this era demands an adaptable, thinking, autonomous person, who is a self-regulated learner, capable of communicating and co-operating with others. The specific competencies that are required of such a person include cognitive competencies such as problem solving, critical thinking, formulating questions, searching for relevant information, making informed judgments, efficient use of information, conducting observations, investigations, inventing and creating new things, analyzing data, presenting data communicatively, oral and written expression.

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