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การสำรวจกลยุทธ์การพัฒนาทักษะการคิดเชิงวิพากษ์ในตัวผู้เรียนภาษาอังกฤษระดับมัธยมศึกษาตอนปลาย

A SURVEY OF STRATEGIES FOR DEVELOPING CRITICAL THINKING SKILLS IN UPPER SECONDARY ENGLISH LANGUAGE LEARNERS IN THAILAND

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บทคัดย่อ

งานวิจัยนี้มีจุดประสงค์เพื่อ 1) สำรวจกลยุทธ์ที่ครูผู้สอนภาษาอังกฤษในฐานะภาษาต่างประเทศในประเทศไทยนำมาใช้ในการพัฒนาทักษะการคิดเชิงวิพากษ์ในตัวผู้เรียนภาษาอังกฤษระดับมัธยมศึกษาตอนปลาย 2) สำรวจประเภทคำถามที่ครูผู้สอนภาษาอังกฤษในฐานะภาษาต่างประเทศในประเทศไทยใช้ และ 3) ระบุอุปสรรคที่ทำให้ครูผู้สอนภาษาอังกฤษในฐานะภาษาต่างประเทศไม่ใช้วิธีการสอนที่พัฒนาทักษะการคิดเชิงวิพากษ์ กลุ่มตัวอย่างของงานวิจัยนี้คือครูผู้สอนภาษาอังกฤษในฐานะภาษาต่างประเทศจำนวน 30 คน จากโรงเรียนมัธยมศึกษาสามแห่ง ซึ่งถูกเลือกโดยการสุ่มตัวอย่าง เครื่องมือที่ใช้ในการวิจัยคือแบบสอบถาม ผลของการวิจัยพบว่า 1) ครูผู้สอนใช้กลยุทธ์การสอนหลากหลายเพื่อพัฒนาทักษะการคิดเชิงวิพากษ์ในตัวผู้เรียนโดยวิธีที่นิยมที่สุดคือการใช้คำถาม 2) ครูผู้สอนใช้คำถามหลายประเภทเพื่อส่งเสริมให้นักเรียนใช้ความคิดขั้นสูงโดยคำถามที่ส่งเสริมการคิดเชิงวิเคราะห์เป็นประเภทที่นิยมที่สุด และ 3) มีอุปสรรคบางประการที่จำกัดความสามารถของครูผู้สอนให้สอนและประเมินทักษะการคิดเชิงวิพากษ์ได้โดยอุปสรรคที่สำคัญที่สุดคือการขาดการฝึกอบรม

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Abstract

This study was conducted to 1) investigate the strategies upper secondary EFL teachers in Thailand use to develop students' critical thinking skills 2) examine the types of questions asked by upper secondary EFL teachers in Thailand and 3) identify barriers that prevent upper secondary EFL teachers in Thailand from using teaching methods that develop critical thinking skills. Thirty upper secondary EFL teachers from Thai institutions were recruited to complete a self-administered survey designed to gather information about teaching approaches, questioning strategies, and obstacles to teaching critical thinking skills. Their responses indicate that 1) they use various strategies to develop critical thinking skills with questioning being the most commonly used method, 2) they use a variety of questioning techniques to encourage higher-order thinking at least some of the time with questions designed to promote analysis being the most preferable, and 3) a number of barriers limit the ability of upper secondary EFL teachers to teach and assess critical thinking skills, with the most significant barrier being lack of training.

คำสำคัญ: การคิดเชิงวิพากษ์ / ครุศาสตร์ / วิธีการสอน / ทฤษฎีการเรียนรู้ของบลูม / การสอนภาษาอังกฤษในฐานะภาษาต่างประเทศ

KEYWORDS: CRITICALTHINKING / EDUCATION / TEACHINGMETHODS / BLOOM'S TAXONOMY / TEACHING ENGLISH AS A FOREIGN LANGUAGE

Introduction

Background

Critical thinking skills are essential for success within the dynamic and complicated modern information economy. These skills enable students to solve the complex real-world problems they will experience in their personal and professional lives, helping them make better decisions, plans, and civic contributions (Lynch & Wolcott, 2001). The Partnership for 21st Century Skills has identified critical thinking, related skills such as problem solving and collaboration, and oral and written communication skills as the most important requirements for the modern workforce (Boontham, 2015). However, research has shown that critical thinking skills are lacking among English as a foreign language (EFL) students (Jeotee, 2012; Zhou, Jian, & Yao, 2015).

Thailand's Education Minister, Dapong Rattanasuwan, has identified critical thinking skills and English language skills as particular areas of weakness for Thai students (Thadaphrom,

2016). Evidence for this failure of the Thai education system comes from a recent study conducted by Jeotee (2012), who found that academic success within Thailand's universities was a poor predictor of higher-order thinking abilities such as reasoning and problem solving, which suggests that students are not being taught how to think critically. This finding is unsurprising, given that the Thai education system tends to use teacher-centered traditional methods that encourage passive learning (such as memorizing vocabulary and grammatical rules), and assessment methods that provide no insight into whether students are able to use English language skills in real-world situations (Soranasathaporn, Sriwilaijaroen, & Noppakunwijai, 2016).

Strategies for Developing Critical Thinking Skills

Five commonly used educational strategies for developing critical thinking skills are questioning techniques, cooperative learning, discussion and debate activities, written assignments, and problem-based learning. While there is some overlap among these techniques, they each bring unique benefits to the teaching of higher-order thinking skills.

Questioning techniques to promote higher-order thinking can be conceptualized using Bloom's Taxonomy (1956). This taxonomy specifies three learning outcomes that require lower-order thinking skills: knowledge, comprehension, and application, and three learning activities that require higher-order thinking skills: analysis, synthesis, and evaluation. Particular types of questions encourage thinking at lower or higher levels within the taxonomy. For example, when teachers ask students to list, name, describe, or solve simple problems, they encourage lower-level thinking, whereas when they ask students to analyze, explain, infer, create, invent, judge, recommend, or debate, they promote higher-order or critical thinking.

Walker (2003) recommends using questions that encourage higher-order thinking based on Bloom's taxonomy to develop critical thinking skills. For example, students might be asked to conduct analysis by identifying assumptions within an article or drawing logical conclusions based on evidence, to demonstrate synthesis by formulating plans or coming up with innovative strategies to solve a complicated problem, or to evaluate information by assessing evidence that could be used to defend or refute a position. What many of the questions that promote higher-order thinking share in common is that they are open-ended, and therefore require complex thought and knowledge construction rather than simple answers (Lynch &

Wolcott, 2001). Higher-order questioning techniques may be used with individual or cooperative learning activities.

According to Slavin (1987), cooperative learning is based on two theoretical foundations. The first suggests that having students complete tasks cooperatively helps them develop their own critical thinking skills by exposing them to the more advanced higher-order thinking skills of certain classmates. The other theoretical foundation suggests that cooperative learning creates a set of social norms that favor group achievement, assuming that teachers reward groups rather than individuals for good performance. In other words, students encourage each other to put in more effort because it is in their best interests that the whole group performs at a high level.

There is substantial evidence indicating that cooperative learning activities can improve critical thinking skills (Pietri, 2015; Soranasathaporn et al., 2016). Cooperative learning may take a variety of forms, but many cooperative learning activities include discussion and debate, which are among the evidence-supported best practices for teaching critical thinking skills (Pietri, 2015; Soranasathaporn et al., 2016). While traditional lecturing is useful for developing lower-level cognitive skills (Garside, 2009), debates are more effective for encouraging higher-order thinking, as they require students to examine both sides of an issue, evaluate evidence, and address real-world issues (Walker, 2003). According to Bernstein's (1995)'s negotiation model, dealing with the tension of opposing arguments encourages critical thought.

Problem-based learning is another method for teaching critical thinking that has substantial empirical support. Based on Piaget's constructivist learning theory, problem-based learning is a learner-centered approach whereby students are encouraged to construct knowledge by conducting their own research and then applying their new knowledge to solve complicated problems (Savery, 2015; Savery & Duffy, 1995). Problem-based learning is beneficial because it encourages students to share opinions, analyze issues from different perspectives, and identify a wider range of potential solutions (Yuan, Kunaviktikul, Klunklin, & Williams, 2008). There is substantial evidence that incorporating tasks or problems within cooperative or individual learning activities helps to develop critical thinking skills (Pietri, 2015; Walker, 2003; Yuan, et al., 2008). Problem-based learning is often carried out in groups, though it can be used as an individual learning activity as well, done either in class or as a written assignment.

However, in addition to promoting critical thinking by having students write about real-world problems or ethical issues, teachers can encourage higher-order thinking by asking students to come up with creative ideas in response to fiction or poetry prompts (Walker, 2003).

Barriers to Teaching Critical Thinking Skills

Researchers have identified a number of barriers to the effective teaching of critical thinking skills, among the most significant of which is lack of time. Having limited time in which to cover a large amount of curricular content makes it difficult to incorporate critical thinking activities (Kowalczyk, Hackworth, & Case-Smith, 2012; Ozkan-Akan, 2003; Reynolds, 2016; Snyder & Snyder, 2008).

Time constraints are not the only barrier to engaging in higher-order thinking activities during class time, as resistance from students can also be a problem. Students may lack the motivation to learn critical thinking skills for a number of reasons, including the fact that many are more concerned with getting high grades than truly learning on a deeper level, and they are not interested in doing the hard work required to develop higher-order skills (Kowalczyk et al., 2012). However, teachers are just as likely to experience resistance or a lack of support from faculty and administration. Aliakbari and Sadeghdaghighi (2013), who conducted a survey of EFL teachers in Iran to identify barriers to teaching critical thinking skills, found that 81% did not receive sufficient support from educational administrators. Moreover, Reynolds (2016) found that many US teachers did not teach critical thinking skills because they feared disapproval from administrators, and there is evidence that this is also a problem in Thailand. According to Methitham (2014), Thai EFL teachers are told that there is only one effective approach to teaching English, which is based on rigid traditional methods, so they are unlikely to receive support from faculty and administrators if they want to use creative methods that are more effective for developing students' critical thinking and problem solving skills.

Lack of support for the teaching of critical thinking leads to other problems, such as the failure to provide training in the skills required to teach and assess higher-order thinking. Aliakbari and Sadeghdaghighi (2013) found that the majority of English teachers considered lack of preparedness for teaching and assessing critical thinking skills to be a significant barrier. This problem has also been noted by other researchers, who have found that the lack of objective ways to measure critical thinking skills makes it difficult to evaluate them (Fani, 2011).

Additional barriers that have been identified by other researchers include lack of resources for teaching critical thinking skills (Reynolds, 2016; Snyder & Snyder, 2008) and large class sizes, which make it difficult to engage in the sorts of activities that promote higher-order thinking (Lipinge, 2014). All of these barriers contribute to the tendency for teachers to use traditional lecture methods and assessment techniques rather than developing approaches designed to encourage and evaluate critical thinking.

Objectives

1. To investigate the strategies upper secondary EFL teachers in Thailand use to develop students' critical thinking skills
2. To examine the types of question asked by upper secondary EFL teachers in Thailand
3. To identify barriers that prevent upper secondary EFL teachers in Thailand from using teaching methods that develop critical thinking skills

Methodology

Participants

This research was conducted as a quantitative study. Participants included 30 upper secondary teachers from three institutions, who were recruited using convenience sampling approach.

Instrument and data Collection

Data were collected using a custom survey. This instrument was developed based on expert recommendations for teaching critical thinking skills and the findings of prior research on teaching methods and barriers to teaching higher-order thinking skills. The questionnaire comprised four sections. The first was designed to gather demographic and background information and subsequent sections focused on teaching methods and challenges.

The second section of the questionnaire comprised a series of five-point Likert scale questions regarding the teaching strategies used to promote critical thinking. These strategies included questioning techniques such as the use of open-ended questions (Lynch & Wolcott, 2001; Walker, 2003) and those designed to develop metacognition (Snyder & Snyder, 2008), discussion activities such as literary analysis (Bunsom et al., 2011; Tung & Chang, 2009) and

debate (Buranapatana, 2006; Walker, 2003), problem-based learning, written assignments (Walker, 2003), and cooperative learning (Buranapatana, 2006; Pietri, 2015; Soranasathaporn et al., 2016). Participants were required to rate the frequency with which they used each method on a scale ranging from never (1) to always (5).

The third section of the questionnaire comprised a series of Likert-scale statements designed to gather information about the frequency with which EFL teachers use particular question types to develop students' critical thinking skills. These questions focused on comprehension, application, analysis, synthesis, evaluation, deduction, induction, adduction, refutation, balanced thinking, perspective taking, causal reasoning, and creative thinking. This question series was derived from the higher-order thinking question prompts provided by Cuseo (2000), Walker (2003), and Zhou et al. (2015).

The fourth section of the questionnaire required participants to provide Likert-scale ratings indicating the significance of a number of barriers to teaching critical thinking skills. These barriers included lack of time (Kowalczyk et al., 2012; Ozkan-Akan, 2003; Reynolds, 2016; Snyder & Snyder, 2008), resistance or lack of support from students (Kowalczyk, et al., 2012; Ozkan-Akan, 2003; Reynolds, 2016) and faculty (Aliakbari & Sadeghdaghighi, 2013), lack of training in teaching and assessing critical thinking skills (Aliakbari & Sadeghdaghighi, 2013; Fani, 201; Ozkan-Akan, 2003; Snyder & Snyder, 2008), and other issues such as lack of resources for teaching higher-order thinking skills (OzkanAkan, 2003; Reynolds, 2016; Snyder & Snyder, 2008) and large class sizes (Lipinge, 2014).

The questionnaire was self-administered for the convenience of participants, and to maintain their anonymity. This was an important ethical consideration, given that respondents were asked to address sensitive issues regarding their own teaching practice and the support or lack thereof received from other faculty members.

Data Analysis

Data were analyzed to produce a series of descriptive statistics, including percentages and frequencies for the demographic data and mean values for the teaching methods, questions, and barriers. This analysis provided insights into the frequency with which particular teaching methods are used and questions posed, as well as the degree to which various barriers are perceived as significant obstacles to teaching critical thinking skills.

Findings

The first section of the questionnaire provided demographic and background information about the respondents. Thirty Thailand-based EFL upper secondary teachers participated in this research, and the sample was weighted toward female respondents (60%). Almost two-thirds (n = 19) held master's degrees, and just over one-third (n = 11) had bachelor's degrees. One-third (n = 10) reported only 0 to 5 years of experience, a fifth (n = 6) reported 6 to 10 years of experience, another one-fifth (n = 6) reported 11 to 15 years of experience, and almost one-third (n = 8) reported more than 15 years of experience. The respondents were also asked to indicate which aspects of English language instruction they focused on in their teaching practice. Nearly all of the participants indicated that they regularly teach English grammar (n = 27), just over two-thirds teach reading skills (n = 22), fewer than half teach writing skills (n = 13), and only around one-third (n = 11) teach listening and speaking skills. Overall, their responses indicate a focus on receptive language skills such as reading and comprehending written English rather than productive skills such as writing and speaking, or skills such as listening that would help with the comprehension of spoken language and facilitate real-world English communication.

Table 1 provides a summary of the descriptive findings for strategies or teaching methods, which indicate that questioning is the method most commonly used to encourage critical thinking among upper secondary-level ESL students in Thailand (mean score = 3.8500), followed by written assignments (mean score = 3.7500), cooperative learning (mean score = 3.4833), problem-based learning (mean score = 3.4333), and discussion and debate (mean score = 2.9333). These scores indicate that ESL teachers rely heavily on questioning and written assignments, while using cooperative and problem-based learning and discussion and debate activities only occasionally. Of the questioning techniques, asking open-ended questions and questions designed to improve metacognitive skills are both popular strategies, with similar average scores. The responses also indicate that teachers are somewhat likely to give written assignments that focus on problem solving or creative work, and to assign cooperative learning activities, group work, and peer questioning. However, when using problem-based learning strategies, they are significantly more likely to assign problem-based group projects than to conduct assessments that require students to apply knowledge to real-world problems.

Table 1: Strategies or Teaching methods (frequency)

Descriptive Statistics	Mean	SD
Questioning	**3.8500**	**1.24**
2.1.1 I ask open-ended questions and follow-up questions that encourage students to think about their answers in more depth.	3.8333	1.23
2.1.2 I ask questions that require students to assess their own thinking processes to help them develop their metacognitive skills.	3.8667	1.25
Discussion and Debate	**2.9333**	**1.38**
2.2.1 I assign discussion and debate topics that require students to conduct research, evaluate information, explore multiple perspectives, form conclusions, and defend their positions with evidence.	3.0333	1.47
2.2.2 I have students read and discuss literature to draw inferences about character motivations and story themes.	2.8333	1.32
Problem-Based Learning	**3.4333**	**1.28**
2.3.1 I have students work individually or in groups to develop solutions to problems.	3.8333	1.23
2.3.2. I develop assessments that require students to apply their knowledge to real-world problems.	3.0333	1.47
Written Assignments	**3.7500**	**1.37**
2.4.1 I ask students to complete written assignments that require evaluating real-world issues or suggesting solutions to real problems and supporting their conclusions and recommendations with evidence.	3.7667	1.36
2.4.2 I create written assignments that require students to think and use language creatively (for example, poetry or story writing).	3.7333	1.39
Cooperative Learning	**3.4833**	**1.53**
2.5.1 I have students work in pairs or groups to complete assignments or engage in dialogue or role-play exercises.	3.5000	1.55
2.5.2 I encourage students to ask each other questions designed to promote critical thinking.	3.4667	1.53

Table 2 provides a summary of responses to the Likert-scale statements for questioning techniques used by Thai EFL teachers. The mean frequency values indicate that questions designed to promote critical thinking are used sometimes, but not regularly. The most frequently used question types are those designed to promote analysis (mean score = 3.5167);

evaluation (mean score = 3.3167); deduction and induction (mean score = 3.2833); adduction and refutation (mean score = 3.2333); causal reasoning (mean score = 3.2167); balanced thinking (mean score = 2.8833); comprehension, application, and synthesis (mean score = 2.8500); perspective taking (mean score = 2.7833); and creative thinking (mean score = 2.6167).

Table 2: Types of questions (frequency)

Descriptive Statistics	**Mean**	**SD**
Comprehension	**2.8500**	**1.32**
3.1.1 How would you put _____ into your own words?	2.8667	1.33
3.1.2 Can you provide an example of _____?	2.8333	1.32
Application	**2.8500**	**1.32**
3.2.1 Can you identify a solution for _____?	2.8667	1.33
3.2.2 How could _____ be put into practice?	2.8333	1.32
Analysis	**3.5167**	**1.55**
3.3.1 What are the most important ideas in _____?	3.4667	1.53
3.3.2 How is _____ different from _____?	3.5667	1.59
Synthesis	**2.8500**	**1.27**
3.4.1 Can you classify _____ into categories?	2.8333	1.32
3.4.2 Can you develop a plan for _____?	2.8667	1.33
Evaluation	**3.3167**	**1.47**
3.5.1 How can you determine whether _____ is accurate?	3.3667	1.50
3.5.2 Which choice is better for _____, and why?	3.2667	1.46
Deduction and Induction	**3.2833**	**1.47**
3.6.1 What can you conclude based on _____?	3.2667	1.46
3.6.2 What can you predict based on _____?	3.3000	1.49
Adduction and Refutation	**3.2333**	**1.43**
3.7.1 What evidence is there for and against _____?	3.1333	1.57
3.7.2 How can you prove or disprove _____?	3.3333	1.47
Balanced Thinking	**2.8833**	**1.30**
3.8.1 What are the strengths and weaknesses of _____?	2.8000	1.32
3.8.2 What are the arguments for and against _____?	2.9667	1.38
Perspective Taking	**2.7833**	**1.31**
3.9.1 How would _____ affect people from different groups?	2.8000	1.32

3.9.2 How would members of different groups feel about _____?	2.7667	1.31
Causal Reasoning	**3.2167**	**1.41**
3.10.1 What do you think caused _____?	3.0333	1.47
3.10.2 How would _____ affect _____?	3.4000	1.52
Creative Thinking	**2.6167**	**1.25**
3.11.1 Can you provide a metaphor or simile for _____?	2.5667	1.22
3.11.2 What might happen if _____?	2.6667	1.30

Table 3 provides a summary of scores for statements regarding the barriers to teaching critical thinking skills. Teachers were asked to rate each barrier on a scale of not at all significant (1) to very significant (5). The most significant barriers identified by the respondents included, in descending order of importance, lack of training (mean score = 3.6500), lack of time (mean score = 3.5667), resistance from students and faculty (mean score = 3.4333), and other factors such as large class sizes and lack of good materials for teaching critical thinking skills (mean score = 3.3833). Of the latter two factors, large class sizes presented a more significant barrier (mean score = 3.5677) than lack of materials (mean score = 3.2000).

Table 3: Barriers to teaching critical thinking (significance)

Descriptive Statistics	**Mean**	**SD**
Lack of Time	**3.5667**	**0.84**
4.1.1 There is too much content to cover in the curriculum, leaving no time for critical thinking exercises.	3.5000	0.90
4.1.2 Classes are too short to incorporate critical thinking activities.	3.6333	0.81
Resistance from Students and Faculty	**3.4333**	**0.95**
4.2.1 Students would rather answer simple questions that focus on lower-level thinking skills than engage in the more challenging process of critical thinking.	3.5000	0.90
4.2.2. Faculty and administrators resist or provide no support for incorporating critical thinking activities and assessments.	3.3667	1.03
Lack of Training	**3.6500**	**0.86**
4.3.1 I have received no training in teaching critical thinking skills.	3.7000	0.95
4.3.2 I do not know how to assess critical thinking.	3.6000	0.81
Other Factors	**3.3833**	**0.95**

4.4.1 I teach very large classes and it is difficult to involve every student in critical thinking activities.	3.5667	0.82
4.4.2 I do not have access to good course materials for teaching critical thinking skills.	3.2000	1.13

Discussion and Recommendations

Discussion

This research was conducted to investigate the strategies or teaching methods upper secondary EFL teachers in Thailand use to promote critical thinking among their students including the types of questions they ask to encourage higher-order thinking, and to identify barriers to teaching critical thinking skills. Regarding the first issue, upper secondary EFL teaching methods are focused largely on grammar and reading skills rather than productive, real-world communication skills such as writing, speaking, and listening, in line with previously identified broader EFL educational trends in Thailand (Soranasathaporn et al., 2016).

The findings of this research indicate that Thai EFL teachers use a number of different strategies for developing their students' critical thinking skills, though they are most inclined to use questioning methods, which are highly effective for encouraging higher-order thinking (Lynch & Wolcott, 2001; Walker, 2003). Written assignments are also a popular strategy for promoting critical thought, in line with the recommendations made by Walker (2003). However, methods that require more class time such as cooperative learning, problem-based learning, and discussion and debate are used less frequently, despite substantial evidence for the efficacy of these strategies (Buranapatana, 2006; Bunsom et al., 2011; Pietri, 2015; Soranasathaporn et al., 2016; Tung & Chang, 2009; Walker, 2003). The less frequent use of these methods is likely attributable to time constraints, which were identified as a significant barrier in this study. This finding is also in line with those of prior research indicating that many teachers do not incorporate critical thinking activities into their teaching practice because they lack the time required to do so (Kowalczyk et al., 2012; Ozkan-Akan, 2003; Reynolds, 2016; Snyder & Snyder, 2008).

As for specific questions being asked by upper secondary EFL teachers in Thailand, those designed to encourage analysis are the most popular, followed by deductive or inductive reasoning. Less popular question types include those that require supporting or refuting conclusions with evidence or engaging in causal reasoning or balanced thinking, and questions

that increase comprehension and encourage application, synthesis, perspective taking, and creative thinking. Thus, students are regularly being asked to analyze information and draw conclusions, but they are less often asked to support their conclusions with evidence, explore issues from multiple perspectives, or do anything creative. Moreover, examined collectively, the questioning frequency scores indicate that questions designed to promote critical thinking are used only some of the time rather than frequently.

A lack of innovation among teachers due to the expectation that they teach in a traditional manner has been identified as a significant problem within Thailand's education system (Methitham, 2014), and the findings of this study provide further evidence that creative methods for promoting higher-order thinking are being neglected due to barriers such as lack of support from faculty. However, lack of training in the teaching and assessment of critical thinking was one of the two most significant barriers identified in this research. This finding was unsurprising, given that lack of training has been identified as a major barrier in previous studies (Aliakbari & Sadeghdaghighi, 2013; Fani, 201; Ozkan-Akan, 2003; Snyder & Snyder, 2008). The other barrier that received a particularly high mean significance score was large class sizes, a problem that has been recognized by other education researchers as well (Lipinge, 2014).

Although the teachers who participated in this study identified lack of training and large class sizes as the most serious barriers to teaching higher-order thinking skills, lack of time also significantly limited their ability to use critical thinking activities in their classrooms, in keeping with the findings of other researchers (Kowalczyk et al., 2012; Ozkan-Akan, 2003; Reynolds, 2016; Snyder & Snyder, 2008). Resistance from students and faculty also presented challenges to the EFL teachers in this study, in line with the findings of prior research in other nations that lack of student motivation to engage in critical thinking, lack of faculty and administrative support, or both pose barriers to teaching higher-order thinking skills (Aliakbari & Sadeghdaghighi, 2013; Kowalczyk, et al., 2012; Ozkan-Akan, 2003; Reynolds, 2016).

Recommendations for Future Research

A number of recommendations for future research can also be made based on the findings of this study. First, it would be useful to conduct focus groups with teachers, educational administrators, and other stakeholders to determine how barriers to teaching and assessing critical thinking skills could be removed. This research could be undertaken as part of

a broader needs assessment study that would be used to support system reform, with the ultimate goal of ensuring that Thailand's education system can meet the needs of modern employers. Second, a review of best practices in other school systems could be conducted to determine which methods should be adopted by Thailand's educators. These best practices would ideally be multidisciplinary, given the evidence that multidisciplinary programs are more effective than single-subject programs for improving both critical thinking skills and English language skills among Thai students (Anurit, 2015). Third, it would be beneficial to develop pilot programs for teaching critical thinking skills and evaluate their outcomes to determine whether they are sufficiently effective for system-wide adoption. Creating these programs would require not only curriculum redesign, but also the development of new assessment methods to evaluate higher-order thinking skills.

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