

ASSESSING THE 21ST CENTURY SKILLS AND THE IMPLICATIONS IN ELT

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Abstract

The rapid change of the world has affected every aspects of our life including education. The way we teach, learn, and assess also change. Today, the teaching and learning are focused on the 21st century skills among which include the skills in critical thinking, creativity, problem solving, metacognition, collaboration, and motivation. These skills are considered essential for college study, career and daily life in the 21st century. Consequently, schools have accommodated these skills in their curriculum emphasizing on the development of students' critical thinking skills through a more innovative, interactive, performance-based and student-centered teaching and learning activities. Accordingly, the assessment practices should also focus on assessing the skills. This paper is a review on current research investigating the assessment of the critical thinking skills in the context of Asia and western countries. The discussion covers two major themes which involve what aspects of the skills are measured and how the skills can be measured especially in the context of English Language Teaching (ELT) classrooms.

Key words: the 21st century skills, assessing, implications, ELT classrooms

INTRODUCTION

The rapid change of the world as the effect of the rapid development of technology has affected every aspects of our life including education. The way we teach, learn, and assess also change to adjust with the development to prepare school graduates for college, career and life in the 21st century. As a consequence, the teaching and learning are now focusing more on the essential skills needed for higher education and career among which include the skills in critical thinking, creativity, problem solving, metacognition, and collaboration. Generally speaking, these skills are not new for many practitioners whereby the skills are already reflected in the Bloom's Taxonomy higher order thinking skills. Thus, understanding the concepts of the skills will not become a problem for teachers as they are already familiar with the Bloom's Taxonomy. However, the crucial point is not on defining the concepts but on how to implement these skills in the teaching and assessment practices. Accordingly, there is a need to characterize the aspects of the 21st century skills that can be assessed. Additionally, there is a need to decide how the assessment of the skills can be carried out to bring effective results.

It is by and large believed that the common teaching and assessing practices in the elementary, secondary, and tertiary levels of education have been focused on the development of critical thinking skills. In fact, school curriculum accommodates the skills to be achieved in the standard of competences. Even some schools and colleges include

critical thinking skill in a single, separate course outlined in the curriculum. Darling-Hammond and Adamson (2010) state that today's school curriculum contain the common core standards focusing on the 21st century skills to ensure that students are ready for college and career. Nevertheless, how to include the measurement of critical thinking skills into the four language skills with balanced portion is still being a crucial problem for teachers of ELT (O'Brien, 2013). The following sub sections elaborate current research on the essential ideas of assessing the 21st century skills particularly what skills to assess and how the assessment can be made effective.

THE 21ST CENTURY SKILLS

Before going further to assessing the 21st century skills, it is necessary to have the same concept of what constitutes the 21st century skills. What skills are considered as the 21st century skills? The 21st century skills cover broad competencies which can be classified based on three general categories: cognitive competencies, interpersonal competencies, and intrapersonal competencies (Soland, Hamilton & Stecher, 2013). Cognitive competencies are those skills in mastering academic content, critical thinking and creative thinking. Meanwhile, interpersonal categories include the abilities in communication, collaboration, leadership, and global awareness. Finally, the intrapersonal competencies which are sometimes overlap with the interpersonal competencies among which include being motivated to success and showing growth mindset.

Suto (2013) highlights that one of the famous frameworks developed for defining the 21st century skills is the framework designed by the researchers of the Assessment and Teaching of 21st Century Skills (ATC). The framework categorizes the 21st century skills into four broad categories. The first category is ways of thinking which include creativity and innovation, critical thinking, problem solving, and metacognition. The second is ways of working which cover communication and collaboration. The third is tools for working which include information literacy and ICT literacy. Finally is the category of the skills for living in the world which include citizenship, life and career, cultural awareness and competence. If we turn back to the Bloom's Taxonomy which includes knowledge, comprehension, and application at the lower level and then analysis, synthesis, and evaluation at the higher level, we can say that actually those higher level skills are now manifested into the so-called 21st century skills. That is why the 21st century skills are not new for some if not many teachers.

Darling-Hammond and Adamson (2010) suggest that in the need to produce school graduates who are internationally competent, the assessment today should rely more on the measurement of students' performance. The performance assessment which requires students' critical thinking and abilities to explain their ideas can help them develop their competencies in thinking critically, analyzing information, creating product, proposing ideas and solving problems. This will at the same time assist teachers to identify the students' strength and weaknesses in the lesson learned. In a similar vein, Sulistyono (2015) states that performance-based assessment emphasizing on authentic and real-life tasks can foster the development of students' critical thinking and collaboration skills as they are engaged in doing the real-life tasks. Being confronted with authentic and meaningful tasks

will enable students to analyze, explore, and do tasks regarding the real-life issues they may find in reality.

To put it in a nutshell, the 21st century skills comprise the skills in thinking critically, creatively, communication, collaboration, multi-cultural awareness and competences as well as the competences in the internet and computer technology. These skills are considered essential in the college, career and life of the 21st century skills where people around the world are connected easily as the impact of the rapid technology development.

WHAT TO ASSESS

Assessing the 21st century skills should begin with having clear notion on what aspects of the skills to be assessed. Duron, Limbach and Waugh (2006) recommend the framework for critical thinking which includes the five steps in teaching and assessing critical thinking. The first is determining the learning objectives by targeting on behaviors in higher order thinking skills. This step requires the realization of the Bloom's Taxonomy in knowledge, comprehension, analysis, synthesis, application, and evaluation. The second step is teaching through questioning. This is aimed to promote interaction and foster the students' thinking abilities. The third is practicing before assessing which means that teachers should prepare before they do questioning strategies. This is due to the complexity of the process of selecting and addressing questions as well as listening to students' responses. The fourth step is reviewing, refining and improving wherein teachers monitor the class activities and use the students' feedback as the source of improvement. The last step is providing feedback and assessment of learning to show students their progress in learning. These five steps are claimed by Duron, et al (2006) as essential before teachers decide the tools to assess and the application. Considering the steps, a student-centered learning is required. As a result, it needs the readiness from both sides of the teacher and the students. They further propose the active and student-centered learning activities to develop students' critical thinking skills. They also recommend the use of relevant assessment like questioning strategy that really measures students' critical thinking skills which cover identifying information, proposing ideas, and defending position (ideas).

The 21st century skills contain the abilities in thinking critically and the notion of critical thinking has been proposed by Ennis (1985) as "reflective and reasonable thinking that is focused on deciding what to believe or do" (pp.45). Within this definition, critical thinking can be linked to the higher order thinking skills in Bloom's Taxonomy. Further, Ennis (1985) explains that in deciding what to believe or do as the criteria of critical thinking, the skill in making inference through deduction, induction and value judging is essential. This asserts that critical thinking requires the application of higher order thinking skills. Similarly, Kozma (2009) proposes a set of core standard of critical thinking skills to be assessed in education. The core skills include creativity and innovation, critical thinking, problem solving, communication, collaboration, information fluency, and technological literacy. Further, he states that each of the skills is embedded in the school subjects to help teachers in teaching and assessing and to facilitate students in the learning. However, Kozma (2009) also reminds teachers that practicing the skill is difficult therefore careful design and implementation are essential to make assessment meaningful.

With regard to classroom assessment, Price, Pierson and Light (2011) state that research on classroom assessment suggests that assessment strategies should at least have three traits. First, assessment should include what and how students are learning. This implies that assessment should be related with the students' learning. Second, assessment should demonstrate broader coverage on skills and abilities to assess. Finally, assessment should promote students' engagement in the assessment.

In conclusion, assessing the 21st century skills deal with assessing the skills in analyzing information, identifying problems, making decision, making inference, drawing conclusion, value judging, proposing ideas, and defending position. These aspects can serve as the indicators for teachers to assess the students' critical thinking as the manifestation of the 21st century skills assessment practices.

HOW TO ASSESS

After having clear notion on what aspects of the 21st century to assess, the next important thing is dealing with how to assess the skills. Studies have been conducted to investigate the effective ways to assess the 21st century skills each which makes use of different and similar assessment tools. The study by Campbell (2010) proposes a Question and Answer Forum through online activities as a technique to engage students in interactive learning and develop students' abilities in thinking critically. In the meantime, Marin and Halpern (2010) claim that the effective ways to enhance critical thinking is by employing explicit and embedded instructional modes as the students exposed with explicit instruction demonstrate much higher scores in the critical thinking test compared to those students in embedded instruction. Further, they propose the Halpern Critical Thinking Assessment as a tool to assess students' critical thinking skills.

A strategic approach is proposed by Price, et al. (2011) who mention six assessment strategies that are actually common and can be utilized to promote the 21st learning environment which eventually can develop 21st century skills. The strategies are rubrics, performance-based assessments, portfolios, student self-assessment, peer-assessment, and student response systems. Meanwhile, Thompson (2011) recommends the frequently use of both formal and informal assessment which enable students demonstrate problem solving skills such as the project-based activities. Also, the use of pen and paper test is still recommended provided the task involves the abilities in analyzing, synthesizing, evaluating, and proposing arguments. Effective questioning is also a tool to develop and assess students' skills in thinking critically.

Another idea is proposed by O'Brien (2013) through a study which investigated the use of the minute papers to measure the critical thinking skills of the ninth graders of a world history class in short essay format. The participants of the study were posed to open-ended questions and asked to describe three different facts, ideas, concepts, or thoughts that they developed during the lesson. Then, their writings were analyzed using the scoring rubric which focuses on the depth of the argument, evidence, reasoning, and conclusion. The result showed that the subjects increased the overall scores as the result of the minute paper writings. Further, the minute papers were more substantial in improving the abilities in the content and reasoning. The study concluded that the minute paper provided

opportunity for the students to present their insight and reasoning into their comprehension, while cultivating their critical thinking skills.

Faravani and Atai (2015) carried out a study which investigated the impact of the dialogic portfolio assessment on the higher order thinking skills of EFL university students in Iran. The subjects were put into the experiment group with multiple intelligences dialogic-based portfolio assessment whereas the control group with dialogic-based portfolio assessment. The main difference of the treatment was on the multiple intelligences by grouping the students and providing tasks based on their intelligences that promote the critical thinking. The rating rubric of higher order thinking skills was employed focusing on the indicators of judgment and interpretation. The findings showed that the experiment group achieved higher mean score (22.7) than the control group (17.85). The study concludes that the use of dialogic based portfolio assessment foster the higher order thinking skills particularly when it is based on subjects' multiple intelligences.

Some other studies show that Problem-Based Learning (PBL) is effective to develop the students' skills in thinking critically. An investigation by Bethell and Morgan (2011) finds that the students taught using PBL developed critical knowledge on the issues in Physical Education and that they were engaged more in the learning. Another investigation conducted by Li (2013) examines the effects of problem-based English Writing Instruction on Thai upper secondary school students' critical thinking abilities and argumentative writing skill. The result of the test on critical thinking shows scores improvement which implies that PBL improves the students' critical thinking skills. Both studies employ rubrics that measure the depth of the students' analysis on problem and reasoning and argumentation skills that represent the 21st century skills.

Those studies focus on the measurement of critical thinking skills through the application of classroom assessments. However, some standardized tests are developed to measure critical thinking skills and creativity (Lai & Viering, 2012). The tests are in the form of multiple-choice and open-ended prompts for instance the California Critical Thinking Skills Test (CCTSS), the Cornell Critical Thinking Test (CCTS) and the situational judgment tests (SJT). These tests allow for the test takers to draw conclusion, make inferences, evaluate arguments, make decision, and other behaviors which indicate the competencies in the 21st century skills. Nonetheless, in the context of classroom assessment, the use of these standardized tests will cost extra budget that the school should spend.

Regarding the use of standardized tests for assessing the 21st century skills, Kaupp, Frank and Chen (2014) conducted an investigation by explicitly teach the critical thinking and problem solving skills by using the model proposed by Paul and Elder. To assess the skills, the standardized measurements and tests are employed: the Cornell Critical Thinking Test: Level Z, the International Critical Thinking Essay Test (ICTET), the Collegiate Learning Assessment (CLA), course survey and think-aloud protocols. Based on the tests results, the CLA shows the highest correlations with the scores on the model eliciting activities, one of the critical thinking skills.

To conclude, research has been carried out as the attempts to collect evidence that can illuminate how the 21st century skills can be assessed. Many of the assessment strategies are familiar for teachers while some are standardized tests. The choice of the

strategies or tests is based on the assessment purposes, students' characteristics and school policy.

THE IMPLICATIONS ON ELT

The need to assess the 21st century skills in classroom practices requires some adjustments in the tools to assess and the application. Based on research findings on language assessments, teachers have already tried to include the 21st century skills in their assessment practices. Research findings also suggests that classroom assessment should focus more on the competencies outlined in the framework of the 21st century skills as they are also stated in the school curriculum than emphasizing on other competencies. This is not to say that the common assessment practices have not adequately measure the so-called 21st century skills but the application needs to be more consistent and apparent.

The emergence of the 21st century skills bring some implications for ELT classrooms. First, the 21st century skills should be taught explicitly to provide students deliberate practice to develop their critical thinking skills (Ennis, 1989; Gelder, 2005). This implies that the skills need to be treated as a single part or course of a school curriculum. Consequently, the skills which are taught explicitly also need to be assessed properly and consistently. The second implication is by embedding the critical thinking skills in the teaching and assessing the four language skills. For instance, in the teaching and assessing speaking and writing, the assessment emphasizes on the students' abilities in analyzing information, finding gaps among information, deciding their position towards an issue, and providing evidence and arguments. All of the observable behaviors of critical thinking are measured through their speaking and/or writing performance wherein students can express their thoughts and demonstrate their critical thinking abilities. The depth of the analysis and argument are served as some indicators of critical thinking. To enable the students to perform the skills, the teacher's expose students with a prompt that can promote the development of the critical thinking skills. However, Kahl (2008) argues that combining critical thinking skills with core standards may be ineffective. He mentions that embedding the skills into the core standard may result in a tendency to do minor changes only whereas teaching the critical thinking skills is more than just modifying the core standards. He continues by suggesting the need to create special standards of critical thinking competencies. The standards are then embedded with the core standards so that the 21st century skills become the major skills to be taught.

The next implication is on the necessity to improve the teaching and learning atmosphere. Eaton (2010) proposes the idea to re-conceptualize the way we teach and assess students in today's language learning classroom by employing more student-centered learning activities and making the use of language, cultural knowledge and technology to connect with other people worldwide. By engaging students in active learning, they will be able to go through a process of inquiry, knowledge construction, decision making and problem solving. Feng (2013) mentions that in order to make teachers' questioning strategy meaningful with regard to developing students' critical thinking abilities, the skills in asking challenging questions and leading the students to critical answer are essential. This implies that teachers need to equip themselves with the

skills in asking critical questions rather than asking questions on recalling information only.

Finally, the teaching and assessing of the 21st century skills bring careful consideration from the side of teachers as practitioners. Since the 21st century skills are considered as a new main focus in today's classroom, the teaching and assessment practices may be trial and error (Soland, et al., 2013). Teachers may find that certain skills are more complicated to teach and assess than the other skills. They may also find that certain strategies are more effective for teaching and assessing the skills in particular condition. That is to say that context and culture can determine the assessment practices and the results. Furthermore, Soland, et al. (2013) recommend that teachers spend considerable time and effort in assessing the 21st century skills since the skills cannot be measured equally well which means that problems may arise.

CONCLUSION

All in all, the assessment of the 21st century skills is centered on the skills that show the students' competences in analyzing information, identifying actual information, exploring resources, solving problem, argumentation, reasoning, proposing solution, defining position, communication, collaboration, and internet and computer technology. To many of us, these skills are not new and have been the focus of attention in the common classrooms teaching and assessing practices. Research also finds that classroom assessments which include performance-based assessment, self-assessment, peer-assessment, rubric, dialogic portfolio assessment, open-ended questions, minute paper, and teacher questioning can be optimized to develop and assess the critical thinking competencies. The traditional pen and paper test is also claimed potential for assessing the critical thinking skills provided the test is designed for that purpose. Additionally, standardized tests are developed to measure the critical thinking and creative thinking for large scale purposes. Assessing the 21st century skills is indeed an essential part of teaching and learning in the 21st century.

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