

Learning Process and Exam Papers: Have They Met The Criteria of 21st Century Learning?

Ayu Widya Ningsih¹, Dinda Andriani², Afifa May Shara³, Kisno⁴

^{1,2,3}English Education Department, Universitas HKBP Nommensen Medan, Indonesia

⁴Management Study Program, Sekolah Tinggi Akuntansi dan Manajemen Indonesia, Pematangsiantar, Indonesia
ayuwidya7@gmail.com¹, dindaandriani2410@gmail.com², afifamayshara30@gmail.com³,
d.shinoda85@gmail.com⁴

Abstract: *This study aims to explore the importance of high-level thinking skills or critical thinking as the main skill needed in the 21st century, the roles and challenges faced by teachers/lecturers in teaching millennial students especially in the faculty of teachers training and education. The data in this study was exam papers and learning methods in each course from semester one to semester three. Documentary analysis was applied to describe the types of test items in the exam papers and some sampling subjects were observed. The results of this study indicated that the learning model and process did not match to the necessity in the 21st century. It was also found that some questions type in exam papers were mostly asking low-level thinking skills to be. It is suggested that the interactive learning process and the combination of lower-level, medium level, and high level thinking skills in the exam papers be applied since those proper combination are influential to improve students' high-level thinking skills, so that the learning model and type of test items on the exam papers can meet the 21st century learning criterion standards that have previously been left behind. In other words, through these two ways, it is expected to be able to help students develop their high-level thinking skills.*

Keywords: *21st century skills, exam papers, higher order thinking skills*

I. INTRODUCTION

In most education systems, students only focus on the concept of listening to lectures, completing assignments and memorizing theories. This sort of learning will disrupt the development of their skills in critical thinking. Passive learning models have a big influence on teaching and learning activities in the classroom that still relies on the lecturer as the only source of knowledge. The activity does not allow students to think critically, even though the fact in 21st century learning is critical thinking become one of the competencies that must be mastered by the students. Based on research conducted by World Economic Forum (2015) competencies that must be mastered in 21st century learning are critical thinking, communication, collaboration and creativity. That means the whole world has recognized that critical thinking is one important aspect that must be mastered in order to compete in the national or international world. The critical thinking ability that they have can help them to overcome their problem in their real life.

Critical thinking is part of the HOTS (Higher order thinking skill). HOTS emphasizes on devolving students' abilities to help them analyze effectively, evaluate by interpreting from existing information and create or synthesize something new (Nourdad, 2018, p. 231). In general,

thinking activities consist of two parts namely LOTS and HOTS which can be seen from Bloom's taxonomy. Bloom's taxonomy is probably the most commonly used among the cognitive process models which categorized analysis, synthesis and evaluation are included in higher order thinking skills (Ulum, 2016, p. 21). Higher order thinking skills of Bloom's taxonomy are what underlie critical thinking. The process of critical thinking is not merely reflecting, and synthesizing information but it also enables the individual to make the reasonable assessment both in class room and their daily life (Utami, 2016, p. 125).

To realize HOTS activities in the classroom, of course it cannot be separated from the role of lecturers. In 21st century learning, lecturers must be able to develop learning models that are suitable to the needs of this century. In this case, the teacher acts as a facilitator who facilitates students to actively participate in class. Lecturers are required to be able to develop learning models that stimulate students to do HOTS activities. The teacher should provide raw material to students, so that students are able to see everything given with doubt and motivated to search for truth. As the lecturers who teach in the 21st century, they also should realize that students in this century are millennial generation. Generation Y or the millennial generation has been defined as those born from 1982-2002 (Abraham, 2015, pp. 51-64). Millennial generation was born in the era of digital technology. The use of technology is useful in improving learning outcomes for students but it makes their activities are inseparable from internet (Perotta, 2013, pp. 314-327). They make the internet a daily necessity and seem unable to live without internet. This is also a challenge for lecturers, because they teach millennial generation, it requires them to be able to master the technology in accordance with the needs of millennial generation in this century learning.

The most commonly used learning model is the lecture method. However, the learning model must be replaced immediately. If it continues to be applied, students will have low thinking skills and be unable to compete in this era. Many lecturers choose to use the lecture method because they don't want to be too complicated to rethink a model that is appropriate to this era. This makes teaching and learning activities from year to year is the same. Students also follow the learning flow applied by lecturers so that their abilities do not develop. So why can't students think critically in 21st century learning? Then, does the commonly used learning model meet the 21st century learning criteria? Looking at some of these problems, the purposes of this research are to find out the problem of students' inability to think critically and to find out whether the learning that has been applied match with learning in the 21st century.

II. REVIEW OF LITERATURE

Based on research conducted by WEF (World Economic Forum) 2015, critical thinking is one of the 4 competencies that must be mastered as criteria in 21st century learning. Critical thinking is considered as an important competency for 21st century students. Developing students' critical thinking is educational purpose in societies around the world. Critical thinking is generally considered to be a form of higher order thinking and, as such, is distinct direct application of knowledge (Forbes, 2018, p. 433). Critical thinking emphasized as a particular skill or set of a skill such as evaluating, synthesizing and creating. Critical thinking also the mental processes, strategies, and representation people use to solve problems, make decisions and learn new concepts (Kaur, Awasthy, & Syed, 2019, p. 117). Furthermore, (Wulandari, 2018,

p. 8) stated that Critical thinking is a multiple step process it can be defined as an active and intellectual process where the individual will observe, analyzed and reflect on new knowledge and integrate it into their current understanding. Critical thinking is very important not only in education but its implications are important in our lives. Critical thinking can help us to interpret information and better to make decisions about what we will do. This is what makes students are required to be critical thinkers and think at a high level as a form to meet the criteria of learning in the 21st century.

HOTS (Higher order thinking skill) conceptualized for decades ago. Higher order thinking skills are one of the thinking skills needed in 21st century learning. HOTS is defined as complex and abstract thinking ability based on simple thinking activity with activities in the learning process including asking, answering, and finding solutions of problem (Soedarto, Harjono, Prasetyanto, & Murbojono, 2019, p. 44). Higher order thinking skills are the ability to think not just recall, restate, or recite but it reaches several dimensions of knowledge, including metacognitive dimension (Supeno, Bektiarso, Lesmono, & Nuraini, 2019, p. 1). In conducting HOTS activities students will find new problems and try to think critically to overcome these problems. In Blooms taxonomy, higher order thinking skill is the ability to think in order to analyze, evaluate, and create. HOTS are set of skills that use a concept that encourages individuals, especially students, to think outside the box (Kong & Yee, 2018, p. 26). HOTS can make students more critical, creative and innovative in solving problems and make the right decisions.

The 21st century is synonymous with millennial generation. Millennial welcome being held to high standards and pursuing ambitious goals. They want ownership in the process and want to work on things that matter and are valuable. Most importantly, they want a voice in the decision that affects them, including their education. If well supported and motivated their potential is seemingly limitless (Benfer & Shanahan, 2013, p. 303). For this reason, a teacher and lecturer play an important role to guide the student especially millennial generation to be able to think critically. As a teacher who will run the teaching profession in the 21st century, of course must have skills related to the demands of the century. Learning developed in the 21st century is learning able to develop competence as a whole, not only equip participants students with a number of core subjects according to specialization, but also need to equip with non-academic competencies that are more interpersonal and intrapersonal (Sole & Anggraeni, 2018, p. 14). These statements explain that the teacher and lecturer must be able to compensate for the development of this era; the teacher can no longer use their old learning model. It means teacher and lecturers should be aware that their role has changed, teacher is no longer the one and only source of learning. The changing role of educators in the 21st century is as follows, *Teaching For Learning*, an understanding of how students learn and how to design effective learning activities and experiences. *Curator* is a producer and consumer of appropriate educational resources through sharing and development. *Technologist* is fluency using learning technology in educationally effective ways. *Collaborator* is sharing and enhancing one's own educational approaches through collaborations within, across and between disciplines. *Scholar* is an awareness and appreciation of effective. Research based discipline appropriate pedagogical approaches. Moreover, *Experimenter* is an opens to try reflect and learn from new approaches, pedagogy and technologies to support student learning (Harahap, 2018, p. 579)

III. RESEARCH METHODOLOGY

This study explained the learning process and exam questions in HKBP Nommensen Medan University especially in English Study Program related to the skills needed in this century, namely the ability to think critically and master High Order Thinking skill (HOTs). The approach used in this research was a qualitative approach and the type of this research was case study. Case study was a process of collecting data and information in depth, in detail, intensive, holistic, and systematic about people, events, social settings, or groups by using various methods and techniques as well as many sources of information to effectively understand how people, events, and social setting operate or functions according to each context (Yusuf, 2014, p. 339). This study explored the learning methods applied by the lecturer and explored the exam questions made by the lecturer in the midterm and final semester examinations with a focus on one particular case whether the learning applied meet the learning criteria that improve the skills needed in this century or not. Data collection techniques used was documentation techniques.

Even more clearly seen from the aspect of selecting cases as research objects, there were at least three types of case studies that have been developed by qualitative researchers, namely intrinsic case study, instrumental case study, and collective case study (Salim 2006) in (Sulistiono, 2016, p. 61). This research belonged to the intrinsic case study because it was done to better understand a particular case that was whether learning meet the criteria of 21st century or not.

IV. FINDINGS AND DISCUSSION

4.1 Findings

A. Learning Models

Considering that critical thinking is very important for education development, especially in this era, it means that the role of teacher / lecturer is important to be able to guide students to think critically including education at HKBP Nommensen Medan University, specifically in English Study Program. To find out that the teacher already able to guide the students to think critically can be seen in the teachers' learning models. Further details will be presented in the table below regarding the learning model implemented by lecturers in the classroom at HKBP Nommensen Medan University, English Study Program.

Table 1. Finding on learning models/process

	Subject	Learning Models
1 st Semester	Pendidikan Agama Islam	Lecturer and Presentation
	Pengantar Pendidikan	Lecture and Presentation
	Literal Reading	Lecture
	Paragraph Writing	Lecture
	Parts of Speech	Lecture and Presentation
	Phonology	Lecture
	Interpersonal Speaking	Presentation
2 nd Semester	English Morphology	Lecture
	Perkembangan Peserta Didik	Lecture and Presentation
	Bahasa Indonesia	Lecture and presentation
	Essay Writing	Lecture
	Intensive Reading	Lecture

	Subject	Learning Models
3 rd semester	Sentence Pattern	Lecture
	Pronunciation Practice	Lecture
	Transactional Speaking	Presentation
	Speech and Debate	Presentation and Lecture
	Philosophy of TEFL	Lecture and Practice
	Extensive reading	Lecture
	PPKN	Lecture and Presentation
	Cultural Text Writing	Lecture and Presentation
	Vocabulary	Lecture and Presentation
	English syntax	Lecture and Presentation
Belajar dan Pembelajaran	Lecture and Presentation	
	Syntactic Structure	Lecture

The table above shows the data regarding learning models that used by most lecturers in three semesters. Overall, it can be seen that learning model used by most lecturers at HKBP Nommensen Medan University in English Study Program in every course is same, that is lecture and presentation. In the lecture model, lecturers only deliver learning material then students only listen and note what is explained by the lecturer.

B. Model of Questions in Exam Papers

Another aspect to find out that the lecture in HKBP Nommensen Medan University already able to develop students' critical thinking ability or not, can be seen from the exam types, Mid Term Test items and Final Test items.

Table 2. Finding on Exam Types

	Subject	HOTs	LOTs	Total	Exam Type
1 st Semester	Pendidikan	-	11	11	Close Book
	Agama Islam				
	Pengantar Pendidikan	3	7	10	Close Book
	Literal Reading				Close Book
	Paragraph Writing	2	5	7	Close Book
	Parts of Speech	7	3	10	Close Book
	Phonology	3	1	4	Close Book
	2 nd Semester	Morphology	3	10	13
Perkembangan Peserta Didik		2	6	8	Close book
Bahasa Indonesia		3	8	11	Close book
Essay Writing		6	5	11	Close book
Intensive Reading		5	2	7	Close book
Sentence Pattern		3	5	8	Close book
Pronunciation		2	6	8	Close book

	Subject		HOTs	LOTS	Total	Exam Type
3 rd semester	Practice					
	Speech	and	1	3	4	Close book
	Debate					
	Philosophy	of	-	22	24	Open book
	TEFL					
	Extensive reading		-	7	11	Close book
	PPKN		-	16	17	Close book
	Cultural	Text	4	4	8	Close book
	Writing					
	Vocabulary		1	6	7	Close book
	English syntax		1	7	9	Close book
	Belajar	dan	-	5	5	Close book
Pembelajaran						
Syntactic		-	5	5	Close book	
Structure						

The table above shows the data of examination type's at HKBP Nommensen Medan University from the first semester until the third semester. Overall, it can be seen that the types of examination at HKBP Nommensen Medan University is close book, and only one course that allow the students to open book.

4.2 Discussion

A. Learning Method

Based on the results of the research above about the learning model used in each course at HKBP Nommensen Medan University, it is known that the learning model used during the three semesters is still LOTS. Because this learning model not yet believed to be capable to develop the students' critical thinking based on Taxonomy Blooms theory. If this continues, it is not impossible that in the world of education, especially at HKBP Nommensen Medan University it will not advance and will be lag behind. Of course, this one thing is really feared, where students are the next generation. If education in a country can follow developments and continue to develop, then the state will also experience progress, and if education in a country has decreased, then that country will be decreased too.

Actually, in every course, there is a chance to develop the students' critical thinking skill, but it depends on learning models that the lecture used in the classroom. If the lecturers only use lecture learning models, it will make the students get used to silent and cannot be able to develop their critical thinking skill. However, the use of presentations in learning is included in the application of technology, which in the 21st century it is one of the fastest growing. Which is it means that, the world of education is required to be able to balance the progress of technological development. Furthermore, in presentation we can also be more active and do more practice. With more practice, students will get better understand related to the the material taught by the lecturer. In the other side, if students are only allowed to understand and memorize, students will not get used to think critically and only accept the material given by the lecturer

B. Model of Test Items in Exam Papers

Based on the results obtained from the table above, it can be seen that from the type of exam questions given to students at HKBP Nommensen Medan University on average they are still categorized at the LOTS. It means not only the learning model that still requires low-level thinking skills but also the test items that must be answered by students. The most items given only require students' low-level thinking skills, most of the problem instructions are explaining, mentioning, sorting and identifying which of all the instruction questions are included in C1-C3 in Bloom's taxonomy and there are only a few questions require the students' high-level thinking skill such as making sentences or synthesizing, or evaluating. Questions like these are only appear on a small portion of the test items or in other words only in a few numbers. In addition, it seems that it is not enough to make the students at HKBP Nommensen Medan University able to develop a high-level thinking at all.

If we look at the two tables above, students tend to cannot be able or only have a little chance to develop their critical thinking skills, because from the start, they only followed directions and orders, without daring to express opinions on a topic or material taught in the class, even so in answering their exam questions. If this continues without changes and efforts from the lecturers to guide their students to be able to think critically, it is not impossible that education will be left behind and not develop at all, that is a very terrible thing. If only expressing an opinion in a forum a student cannot, how they will dare to appear in front. In this increasingly advanced era, of course that should not happen, and then in this case the lecturers' efforts to improve their students' critical thinking skills were still not found.

V. CONCLUSION

If there is only one ability most needed by humans, of course it is critical thinking. With critical thinking everyone, especially students as the next generation of the nation can face progress that is increasingly developing. Therefore in this 21st century students are expected to be able to think critically, communicative, collaboration and also make creativity. But unfortunately the implementation carried out to make students think critically is still not maximal in terms of the learning process. As happened at HKBP Nommensen University, the learning process still on LOTS not HOTS. The learning process dominated by lecture model. The learning process in each course is same, starting from first semester to third semester not show progress even though the semester continues to level up. The lecture model tends to make students become lazy and bored in learning because lecturers only explain the material and then students only listen to and understand what material has been explained by the lecturer. The lecture learning model is a teacher-centered learning model that makes the presence of students in the classroom passive. When students have become passive they will not want to try to think critically. Certainly, the learning process applied does not meet the criteria in 21st century learning.

It is similar to the form of test items done by the students in HKBP Nommensen Medan University especially in English Study Program, where the most test items only requires the students' low-level thinking skills, not at all test the students' high-level thinking skill. The most questions only ask the theory such as definition, mentioning, etc. Therefore the students tend to be only memorizing theories not learn to synthesize, evaluate, or create something related to the material.

In this case, of course the role of the teachers or lecturers is very important for the progress of students. Every teacher should teach and guide the students in accordance with the times, for the example in this millennial era. As we know generations in this era spent six and a half hours to used technology, specifically they spent lot of their times with smartpone. Therefore, it will be better if the teacher or lecture also used that technology in their learning process. It is as an attempt to spur students' reasoning abilities so they can also take advantage of the progress of this digital age, wisely and correctly, so that the goals of this education will advance and keep up with the times.

So, in terms of any learning both in the learning process or exam paper, nothing of them show HOTS activities. These are the things that make students unable to think critically, and even unable to compete on an international scale, and also not match with the 21st century learning criteria.

REFERENCES

- [1] Abraham, R. (2015). Consumption patterns of the millennial generation cohort. *Modern Economy*, 51-64.
- [2] Astutik, S., Bektiarso, S., Lesmono, A. D., & Nuraini, L. (2019). What can students show about higher order thinking skill in physics learning? *IOP Confrence Series: Earth and Environmental Science*.
- [3] Benfer, E. A., & Shanahan, C. F. (2013). Education the invincibles: Strategies for teaching the millennial generation in law school. *Clinical Law Review*, 1.
- [4] Forbes, K. (2018). Exploring first year undergraduate students' conceptualizations of critical thinking skills. *International Journal of Teaching and Learning in Higher Education*, 433-442.
- [5] Forum, W. E. (2015). *New vision for education unlocking the potential of technology*. Worl Economic Forum.
- [6] Harahap, M. (2018). Revolusi industri 4.0 dan pengaruhnya terhadap peran pendidik di abad 21 dalam dunia pendidikan. *Prosiding Seminar Nasional Fakultas Ilmu Sosial Universitas Negeri Medan*, 578-580.
- [7] Kaur, G., Awasthy, S., & Syed, U. G. (2019). Effect of critical thinking on cognitive enhancement. *Defence Life Science Journal*, 117-121.
- [8] Kong, H., & Yee, M. (2018). Constraints faced by technical teachers in the application of higher order thinking skill in teaching process at vocational colleges. *TVET Towards Industrial Revolutions 4.0 Proceedings of the Technical and Vocational Educational and Training International Conference (TVETIC)*, 26-27.
- [9] Nourdad, N. (2018). The Effect Of higher order thinking skill instruction on EFL reading ability. *International Journal Of Applied Linguistics&English Literature*, 231.
- [10] Nuryanti, L., Zubaidah, S., & Diantoro, M. (2018). Analisis kemampuan berpikir kreatif siswa SMP. *Jurnal Pendidikan: Teori, Penelitian dan Pengembangan*, 155-158.
- [11] Perotta, C. (2013). Do school-level factors influence the educational benefits of digital technology. *British Journal of Education Technology*, 314-327.

- [12] Soedarto, H., Harjono, Prasetyanto, B., & Murbojono, R. (2019). Agribusiness mobile based learning: Adic model to support students' HOTS and life skill in Vocational School. *World Journal of Vocational Education and Training*, 42-58.
- [13] Sole, F. B., & Anggraeni, D. M. (2018). Inovasi pembelajaran elektronik dan tantangan abad 21. *Jurnal Penelitian dan Pengkajian Ilmu Pendidikan: e-Saintika*, 10-18.
- [14] Sulistiono, M. (2019). Implementasi Hybrid learning menggunakan aplikasi Edmodo pada matakuliah metode penelitian kualitatif. *ElementerIs: Jurnal Ilmiah Pendidikan Dasar Islam*, 61.
- [15] Ulum, O. (2016). A descriptive content analysis of the extent of Bloom's taxonomy in reading comprehension question of the course book Q: Skill for success 4 reading writing. *The Qualitative Report*, 21.
- [16] Utami, B. (2016). Critical thinking skill profile of high school students in learning chemistry. *International Journal of Science And Applied Science*, 125.
- [17] Wulandari, R. (2018). *The relationship between critical thinking and reading comprehension by the second year students of State Islamic Senior High School 4 Kampar*. Riau: Universitas Islam Negeri Sultan Syarif Kasim.
- [18] Yusuf, A. M. (2014). *Metode penelitian kuantitatif, kualitatif, dan penelitian gabungan*. Jakarta: Kencana.