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21st Century Learning Skills among Lecturers in Vocational College

Norhasyimah Hamzah*, Muhammad Fazrulhelmi Ahmad,
Nur Syamimi Mohd Razali and Noorrul Ain Ahmad Jamaludin

Abstract--- *The twenty-first century learning is a learning that involves the ability to collect, retrieve, organise, and manage information. This learning technique also applies information-based methods and is able to produce accurate information using existing resources. This new method of learning is associated with the use of digital technology, inventive thinking, effective communication, and productivity. The twenty-first century learning involves certain skills such as high-level thinking skills, communication, collaboration, reflection, and creativity. The implementation of this study has achieved the following five objectives: (i) to identify the perceptions of the high-level thinking skills of the lecturers towards the twenty-first-century learning, (ii) to identify lecturers' reflection skills and perceptions on the twenty-first-century learning, (iii) to identify the perceptions of the collaborative skills of the lecturers towards the learning, (iv) to identify the relationships between high-level thinking skills and lecturer's reflection skills in the new method of learning, and (v) to identify the relationships between lecturers' high-level thinking skills and collaborative skills in twenty-first-century learning. A quantitative method was adopted by means of questionnaires and descriptive methods. Based on the understanding and application of lecturers towards 21st century learning involves three skills, namely high-level thinking skills, reflection skills and collaborative skills. The results of the study indicate that the rate of adopting the twenty-first-century learning is still moderate. This is due to the lack of understanding and control over the twenty-first-century learning, and the lecturers are still practicing the twenty-first-century learning method known as a method of reducing a two-way interaction between lecturers and students of vocational colleges.*

Keywords--- *21st Century Learning, Collaborative Skills, Reflection Skills, High Level Thinking Skills.*

I. INTRODUCTION

Malaysia is a thriving country in line with the progress of other countries. In order to offer a world-class education, Malaysia needs to bring about a change that would affect the education world. As such, the Ministry of Education Malaysia (KPM) has looked into several strategies, one of which is to introduce twenty-first century learning in 2014.

21st century learning has become a trend in the education world because it is seen as able to meet current educational needs and bring about changes in the current education world. The 21st century learning is said to be a student-centered learning process. A number of learnings are included in 21st century learning, such as thinking, thinking skills, collaborative skills, skills communication, critical thinking criteria, creativity, and moral and ethical

Norhasyimah Hamzah, Lecturer, Faculty of Technical and Vocational, Universiti Tun Hussein Onn Malaysia.*
E-mail: hasyimah@uthm.edu.my
Muhammad Fazrulhelmi Ahmad, Master Student, Faculty of Technical and Vocational, Universiti Tun Hussein Onn Malaysia.
Nur Syamimi Mohd Razali, Lecturer, Faculty of Technical and Vocational, Universiti Tun Hussein Onn Malaysia.
Noorrul Ain Ahmad Jamaludin, Master Student, Faculty of Technical and Vocational, Universiti Tun Hussein Onn Malaysia.

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values. Therefore, knowledge must be communicated in way that is integrated with student learning activities [1].

The twenty-first century learning emphasises critical skills, communication skills, reflection, collaboration skills, assessment, problem solving, technology, creativity and innovation skills. Critical thinking skills allow individuals to make judgments and decisions effectively, such as by analysing; evaluating evidence, arguments, claims, and beliefs; and critically describing learning experiences and processes that occur. The creative aspect of creative thinking allows students to use various techniques with new ideas effectively. In addition, communication and collaborative skills can contribute to the success of students in the activities of the twenty-first century learning [2].

1.1 The Twenty-First-Century Learning

The 21st century community is a science-technologically-oriented society that uses the latest technology infrastructure in everyday life [3]. Such a claim can be evidenced by the latest trends in which technology has influenced all areas of life and affects the nation's education. This century requires a transformation of education as a whole so that the quality of teachers is built that is able to advance knowledge, training, student equity and student achievement [3].

The professionalism of lecturers is an essential element in applying the twenty-first-century skills among students during a teaching-and-learning process in classroom [4]. Lecturers require the skills to integrate knowledge with local relevance by continually reflecting their experience and practice. Lecturers with effective professionalism can influence the development of the skills among their students.

The process of teaching and learning is an unfamiliar process to a lecturer [5]. The recent learning culture has witnessed a diversity in using teaching aids to create a stimulating learning environment. The activities are increasingly being given priority in implementation. In line with the current learning situations, a lecturer now needs to be more aggressively applying the use of technology in their teaching and learning processes as well as in utilising technological revolution, in line with educational evolvement. As observed from the ongoing implementations, it is believed that the twenty-first-century learning method is able to produce versatile, creative, and innovative students.

Twenty-first-century skills are a set of indispensable skills for students to compete in the digital age. These skills need to be sharpened in classroom by lecturers, whose teaching method can greatly influence the success of a twenty-first-century learning. Lecturers are one of the contributing factors to the ability of students to master certain skills, such as communication, thinking, and problem-solving skills, in line with the final goal of producing academic-knowledgeable students who are able to apply their knowledge and skills in their assignments.

One measure is to have the basics in core subjects be supported by skills such as innovative skills and learning, information skills, media and technology, life skills, and career skills. Thus, students who are able to use technology in studying, organising, evaluating, and finding information are also vulnerable to the 21st century method of collaboration and self-learning [6].

1.2 Challenges to the Students In Implementing Activities

The real workload has been a challenge to the implementation of the twenty-first-century activities although

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some scholars have denied that lecturers are not involved with administrative duties [7]. The reality is that in vocational colleges, lecturers also carry out administrative work such as data entry and are involved in student associations. According to the International Level Organization (ILO), lecturers are unable to work more than 45 hours a week, yet in the current situation, lecturers still have to work through weekends particularly to conduct extra classes. Some lecturers have to be involved in school management even during school holidays.

The real workload has been a challenge in the implementation of 21st century learning activities although some denied that lecturers are not involved with administrative duties because the true task of a lecturer was to teach students [7]. The challenge of lecturers is to improve the quality of knowledge, which involves the way they translate the process of teaching and learning [8]. A lecturer's knowledge must be constantly updated so that the knowledge presented to the student is new. Lecturers must have the ability to organise the syllabus of a subject in a way that can be "re-explored" by their students. The lecturer must also be able to translate the contents of a curriculum to students' learning experience. Failure to do so can be seen as a failure to improve the quality of knowledge presented in a classroom.

In addition, the challenge of lecturers in conducting 21st century learning activities can be gauged from the perspective of technology skills. Educators in both developed and developing countries are cautious about the use of instructional media and are slowly adopting innovative methods within the teaching-and-learning process [9]. Lecturers are less likely to use technology skills because of the lack of teaching media when needed, heavy teaching burden, lack of information, lack of appropriate teaching media for specific areas, lack of skills training and skills, as well as uncertain electricity supply. In addition, lecturers' attitudes are a barrier to the use of technology skills in classroom. The fear of change and the use of complex tools as well as negative past experiences would also impose a challenge for lecturers to implement technological skills in twenty-first-century learning activities.

Relationships and pressure from parents are also a challenge for lecturers to carry out twenty-first century learning. Initially, attaining full education for children have become a culture to parents [10]. Such a culture, nevertheless, has put pressure on lecturers to ensure that their students are able to follow the learning process and excel in classroom. Lecturers not only provide intellectual knowledge and skills but also take responsibility for disciplining the students. In doing so, they have to face various challenges and pressures, thus prompting them to implement the twenty-first century learning method more effectively.

The next challenge is the constraint of learning time. The time allocated for teaching-and-learning session can be limited and will cause the lecturer to not repeat a topic if the student leaves or is late to class. Time constraint has led the students to miss the guidance and students cannot concentrate as well as gain control during a teaching-and-learning process. In addition, the teaching methodology applied by lecturers is also a challenge for twenty-first learning. Among the methods used are demonstration and explanation methods. Although these methods are seen as the best ways of teaching, they are time consuming and are difficult to be repeated. Some other lecturers use the traditional methods of explanation methods, which requires much reliance on them and a long time to complete the syllabus [11].

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II. METHODOLOGY

This study was designed as a case study conducted by means of a quantitative approach. This approach can provide legitimate and reliable findings to achieve the objectives of the study and answer the research questions. Descriptive quantitative methods were used to test the functionality of the items, as well as the validity and reliability of the instrument through the data obtained. As pointed out by Creswell [12], a descriptive method serves to describe an occurrence in a variety of perspectives involving attitudes, beliefs, behaviours, views, feelings, and perceptions. Accordingly, the quantitative methods were thought to be appropriate for the study. The method was used to identify the level of proficiency of lecturers towards 21st century learning.

Selection of location plays a major role in conducting a study because inappropriate location can affect the validity and reliability of the findings. Reliability refers stability, equality, and internal consistency, while validity refers to the validity of the content, the validity of the relationship of the criteria, the validity of the constructs and the validity of the face. Therefore, the sample of the study and the location are interrelated; inappropriate location may render findings to be invalid thus affecting the reliability and validity of a study.

The location chosen for this study is vocational colleges around Melaka and Selangor. The selected vocational colleges in Melaka were the Central Melaka Vocational College and Vocational College Datuk Seri Mohd Zin. The selected vocational colleges in Selangor were Kajang Vocational College and Sepang Vocational College. These colleges were selected for their suitability in terms of providing samples that consist of lecturers who teach automotive courses. Sampling from the selected colleges allowed the researchers to determine the lecturer's level of proficiency in teaching and learning process based on 21st century skills. The instrument developed for the questionnaire survey was in line with the objectives and questions of the study. The purpose of the instrument was to identify the lecturers' levels of skills in 21st century learning activities.

A set a questionnaire was developed by the researchers and were distributed to the respondents. The questionnaires consists of four sections: A, B, C, and D (Table 1). Part A queries the demographic details of the respondents. This section queries the respondents' highest level of academic education, work experience, and teaching subjects. Part B, C and D query the respondents' agreement to each of the items of the three domains (higher-level thinking skills, student reflection skills and collaborative skills) proposed by the researchers.

Table 1: Distribution of Questionnaire Questionnaire

Section	Details
A	Respondent Demographic Information
B	Lecturer's perception level towards 21st Century skills can promote high-level thinking skills.
C	The level of perception of lecturers towards 21st Century skills can encourage student reflection skills.
D	Lecturer's perception level towards 21st Century skills can enhance collaborative skills.

Section B, C, and D provide four response options in terms of agreement to be stated on a Likert scale. A likert scale is used to measure the opinions, attitudes, and perceptions of a person or group about a social phenomenon [13]. The Likert scale adopted for the study is shown in in Table 2.

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Table 2: Likert Scale (Source: Sugiyono, 2009)

Level Of Agreement	Likert Scale
Strongly Disagree	1
Do Not Agree	2
Agree	3
Strongly Agree	4

III. FINDINGS

The data of this study were analysed descriptively by means of means scores and standard deviation, using Statistical Package for Social Science 16.0 (SPSS 16.0). Results from the analysis are presented in four (4) sections: Part A (background respondents), Part B (Higher-Level Thinking Skills domain), Part C (Reflection Skills domain), and Part D (Domain of Collaborative Skills). Altogether, the questionnaire contains nineteen questions. Table 3 shows the mean scores of the domain of high thinking skills.

Table 3: Mean Score for Domain of Higher-Level Thinking Skills

Item	Statement	Mean Score	Standard Deviation
B1	Designing techniques / methods of high-level thinking skills while interacting with lectures	2.9	0.576
B2	Question the current high level quiz questions interacting in college	2.76	0.532
B3	Guiding students answer questions at high levels	2.88	0.633
B4	Using thinking skills tools high level during interaction in lectures	2.9	0.617

The evaluation revealed that the highest mean score is recorded for item B1 and B4 (2.9) followed by item B3 (2.88) and B2 (2.76). In regard to standard deviation, item B3 recorded the highest values of 0.633 while item B4 items noted the highest standard deviation value of 0.617 followed by items B1 and B2 (0.76 and 0.532, respectively). The mean score of all the items in domain B shows a simple scale. Table 4 shows the mean scores of the reflection skills domain.

Table 4: Score Mean for Reflection Skills Domain

Item	Statement	Mean Score	Standard Deviation
C1	Guides students to write corrections.	2.48	0.707
C2	Encourage students to make self-reflection after teaching and learning sessions	2.40	0.665
C3	Obtain student feedback in teaching and learning sessions.	3.05	0.623
C4	The lecturer wrote a reflection after teaching and learning sessions	3.43	0.668

The mean score shown is simple for all the items. However, in regard to the items in C4, difference was noted in the mean score as this item received the highest mean score (3.43) compared to C2 with the lowest mean score (2.40). Item C3 received the highest second mean score (3.05) and item C1 (2.48). The evaluation results also indicate that the highest standard deviation was recorded for item C1 (0.707), and that item C4 and C2 differ only by 0.003 with a score of 0.668 and 0.665, respectively. Item C3 received the lowest standard deviation value (0.623). Table 5 shows the mean score for the domain of collaborative skills.

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Table 5: Score Mean for Collaborative Skills Domains

Item	Statement	Mean Score	Standard Deviation
D1	Collaborating with co-workers to develop a professional learning community	2.79	0.750
D2	Encourage students to use various social media to interact	3.21	0.565
D3	Adopt a lesson plan to improve the level of professionalism of the college	2.98	0.643
D4	Using effective communication skills	3.26	0.544
D5	Using a collaborative approach in teaching and learning.	3.17	0.490

No significant differences were noted in th mean scores of the items in the collaborative skills domain. Item D4 received the highest mean score (3.26) and item D2 received a mean score of 3.21. The difference noted between the two items is only 0.005. Additionally, item D5 received a mean score of 3.17 while D3 item received a mean score of 2.98, and item D1 received the lowest mean score of 2.79. As for standard deviation, item D1 received the highest standard deviation (0.750) whereas item D5 received the lowest standard deviation (0.490). As for items D3, D2, and D4, each received a standard deviation of 0.643, 0.565, and 0.544, respectively.

IV. DISCUSSION

Higher Order Thinking Skills (HOTs) should be implemented in line with the three key elements of curriculum, pedagogy, and assessment [13]. If these three elements cannot be applied in classroom, the implementation of HOTs can be challenging. Therefore, the level of student's ability in HOTs is also low and lecturers will be blamed for not applying HOTs in teaching and learning. Lecturers are comfortable with the conventional teaching of using the "Chalk and Talk" method, in which learning is still centre on lecturers and on students as the listeners or information receivers. This method was found to be difficult in harnessing students' critical and creative thinking as the students were unable to explore their own thoughts. This method also causes students to have problems completing the course work if they rarely or do not use their high-level thinking skills to generate ideas.

Therefore, Chew [14] pointed out, implementing the twenty-first-century learning in the process of learning and teaching will be more effective if the contents of the lesson are not focused. The implementation of planned learning and teaching activities does not guarantee the success of its implementation. Lecturers should give students the freedom to give their views without help or guidance. A classroom atmosphere will be more productive if the students are given the opportunity to give their opinions and express their thoughts.

The overall feedback received from the lecturers showed a moderate mean rate thus suggesting that the lecturers studied lacked reflection skills in their teaching-and-learning process. Skills reflection requires lecturers to encourage students to make self-reflection after a teaching session and teaching sessions show the lowest mean score compared to others. This indicates that the culture of writing a reflection is not the culture in the learning process in Malaysia as compared to study culture in the East Asian countries, such as South Korea and Japan. In addition, the lecturers are still at a low level in writing a reflection after a teaching and learning session, which is linked to the field of external tasks that the lecturers need to fulfill so that the lecturers cannot finish their job.

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Therefore, the applicability of the Teaching and Learning (T&L) process requires students' feedback in a T&L session. Feedbacks allow researchers to evaluate whether their students have encountered any problem during a teaching-and-learning process. In addition, lecturers should also be able to translate the learning and teaching processes. The inability to do so can lead to the difficulty in obtaining feedback from students. As pointed out by Rohani [4], lecturer must have the ability to translate a syllabus and arrange the subjects to be explored by the students as new knowledge. An example, lecturer must be able to translate and respond to what is being taught to students. A lecturer's failure to do so can be seen as his or her failure to improve the quality of knowledge that will be presented in the classroom.

As reported in the previous section, the interpretation of collaborative skills has shown a moderate scale. This situation proves that lecturers also lack collaborative skills in their teaching classes. Responses from the open-ended questions in the questionnaire also indicated that the lecturers are still less cooperative with colleagues thus developing a professional learning community (KPP) can prove to be challenging. Lecturers who do not interact each other will tend to make their own decisions. As a lecturer, they need to interact with one another to develop knowledge hence enabling them to build a qualified question (HOTs). As pointed out by [16], the professional learning community would be a systematic process involving lecturers who will work in a team to analyse and improve practice in classroom. Therefore, lecturers will need to continually work in a team to create a strong team of learners and produce competitive students.

Lecturers are still easy to devise teaching plans to improve their professionalism. The lesson plan is important for producing excellent, high-quality, and world-class schools. However, the lesson plan is considered to be inconvenient as it may burden lecturers. As noted [17], the lesson plan will actually help lecturers in collaborative practices, which require ideas, experience, and skills to enhance the knowledge and pedagogical contents. This is because the lesson plan involves group meetings and discussions among lecturers thus indirectly fostering the proliferation of knowledge, the development of ideas and individual creativity.

V. CONCLUSION

Overall, it can be concluded that instructors still need motivation to ensure they are keen to implement the twenty-first-century learning technique. Appropriate methodology that can be proposed includes a course for understanding the technique of learning and its method. Instructors need to understand how the twenty-first-century learning can be very effective in the T&L process. Yet the steps required to implement this learning process, the skill constraints, and the academic performance level of students have demotivated instructors to apply the new learning method. Monitoring of the course curriculum is also important in ensuring that the faculty is no longer in the process of submission.

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