Exploring Quantity Surveying Students Understanding on Various Types of Formative Assessment and their Preferences: A Taruc Case Study

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ABSTRACT

Employers nowadays are looking for graduates who are able to cope with change and well-developed individual (Aida, Norailis and Rozaini, 2015). To achieve this, HEIs through various programs were slowly making a huge transition from traditional to student-centred learning. Besides the teaching method, the assessment part also was reviewed by lecturers to ensure students are able to excel both in academic and generate soft skills as demanded by employers. There are various types of assessment that were introduced namely rubric, portfolio, and etc, which have been designed to encourage students' engagement in learning. To produce the required employability skills as demanded by the employers, this paper will examine two areas namely: (i) to determine students' understanding of the various types of formative assessment and (ii) and their assessment preference for better employability skills. A questionnaire survey was distributed among 90 numbers of QS students and the frequency analysis is used to analyse the results. It was found that the majority of students were aware of the emergence of various types of assessment in the learning process. They also shared their preference for performance-based assessment which remains useful to generate employability skills for technical subjects. Further research is required to design a constructive assessment that can be designed to boost their learning performance and generate the employability skills as demanded by employers.

Keywords: Formative Assessment, Students Engagement, Employability Skills, Understanding, Preferences

INTRODUCTION

Malaysia higher education system has been improving year by year and has started to earn recognition at the international level. This is proven from Quacquarelli Symonds (QS) University Rankings, which stated that among those 5 universities of Malaysia that are being listed in the top 500, the University of Malaysia has been the highest ranking at rank 70 (University Ranking, 2020) Furthermore, in the past decade, Malaysia has become the choice of tertiary education level for foreign students as there are more enrollments of overseas students in our universities. Besides, there are universities in Malaysia that have been recognized as the research hub globally and have conducted collaborative research with other universities in other countries (Rafidi, 2020).

In 2016, UNESCO promoted sustainable development and global citizenship education at the same time emphasizing a holistic learning environment which is stated in Sustainable Development Goal (SDG) No.4 in particular SDG4.7 (United Nations Educational, Scientific and Cultural Organisation, 2017). The Global Citizenship Education (GCED) states that to achieve the goal of in SDG4.7, it is important to nurture the learners in these three core aspect which are i.e. i) cognitive, ii) social aspect and iii) behaviour (United Nations Educational, Scientific and Cultural Organisation, 2017). The Sustainable Development Goal (SDG) proposition has been well supported by the ASEAN countries and they too have come out with a blueprint for ASEAN Work Plan of Education 2016-2020, one of their targets is to emphasise access to quality inclusive education and development of lifelong learning (Lanceta, 2015). Our country too has shown support towards this goal and

that can be seen in the country's blueprint, Malaysia Education Blueprint (2015-2025). Higher Education outlines their new target to achieve in our higher education development. One of their ten targets, which are producing holistic, balanced graduates, has clearly shown the desire of our government to produce more quality and all-rounded graduates (Ministry of Education Malaysia (MoE), 2015). Therefore, it does show that many countries are now focusing on converting the learning goals in their education system so that the graduates could empower themselves with the necessary skills set in the future working environment and able to meet the demand of it. The example of the effort that made by these countries is using the different instructional method to optimize students' learning opportunities to learn a different skill set as example cooperative learning, problem-based solving learning, experimental learning method, etc. (Khuzzan and Mahdzir, 2020). These methods used are to aim of improving students' critical thinking skill, communication, collaboration attitude, motivation, etc. and at the same time allowing them to apply their knowledge and boost their confidence (Paolini, 2015).

LITERATURE REVIEW

Employers are expecting graduates to have employability skills before they walk into the working environment. Furthermore, since the amount of graduates has been increasing year by year in this competitive construction industry, it makes no reason for the employers to provide job opportunities for all the graduates but selecting to hire those graduates that are understanding towards the company situation and can provide viable solutions to solve the company's problems (Mazuki, 2015).

In essence, the employability skills encompass the soft and hard skills (Kien Bee and Su Hie, 2015). Soft skills are defined as traits, personalities, characteristics of a person (Rashidi, Fakhrul Adabi and Ilhamie, 2013). Some are commonly known as management skills, leadership skills, cognitive skill, etc. There are 4Cs of soft skills which are critical thinking, communication, collaboration and creativity that are at the same time described as 21st-century skills (Ahmar Ahmad *et al.*, 2019).

According to Aziam and Mun (2011), the results of the research conducted by the Malaysian Employer Federation, most of the employers today in Malaysia prefer graduates to have good communication skills (68%), followed by work experience (67%), interpersonal skills (56.2%), passion and commitment (55.7%), being a team player (47.8%), having the right degree (46.3%), good academic results (37.9%), a desire to learn (37.9%), can work well under pressure (34.0%) and can take initiatives (32.5%) (Hamid, Islam and Hazilah, 2014). The result of this research is well supported by (Rashidi, Fakhrul Adabi and Ilhamie, 2013) which have ranked communication skills as the second preferred skill (81%) by employers. In addition, there is a survey done by (Agus et al., 2011) that highlighted the widest gap between the expectation of employers on graduate soft skills and what soft skills graduates possessed is related to decision and problem-solving (17.3%), followed by thinking skills (17.3%), then communication and interpersonal skills (16.9%), etc. Hence, a conclusion can be made that both communication and interpersonal skills have become the most lacking skills among graduates.

In essence, these skills can be generated through assessment, which generally plays an important element in students' learning. The main purpose of having an assessment is to improve student's performance and achievement of the students (Rawlusyk, 2018; Gronlund, 2006). Within the Malaysian context, it is common practices at the university level by having a series of form of exams, quizzes, midterm examination, presentation and assignment (Khuzzan and Mahdzir, 2020) or so-called summative assessment. However, this assessment discourages students to be active student. (Rawlusyk, 2018; Ertmer & Newby, 2013). Moreover, this assessment fails to help students in having "deep thinking and long term retention learning concept" in their mind (Rawlusyk, 2018; McCoy, 2013, p. 146).

Knowing that this kind of assessment has some disadvantages (ie one-way interaction), most teaching and learning nowadays have applied a hybrid approach of assessment or so-called formative assessment to achieve greater engagement among students. The technical courses also have no exception to this. The examples of formative assessment that have been used are rubrics, performance-based assessments (PBA), portfolio assessment, learner self-assessment, peer assessment and student response systems (SRS). Via student-centred learning, this assessment would normally able to encourage the engagement of learner, interactivity (mutual interaction) and produce a range of skills and abilities. The detailed summary of each assessment can be categorised as below:

TABLE 1
Assessment for Learning throughout the Whole Learning Process

Table 1 Formative Assessment for learning throughout the whole learning process

Types of formative assessment	Advantages of assessment	Skills
Rubrics assessment	"The reviews on the research about rubrics, the transparency of rubrics may facilitate the assessment for learning related process, such as interpreting and using feedback or assessing the performance of peers" (Jonsson and Panadero, 2016).	"Rubrics criteria can push students to think more deeply about their learning…and develop critical thinking skills" (Price, Pierson and Light, 2011). According to (Smit and Birri, 2014), rubrics can help in developing self-assessment skills. According to Panadero and Jonsson, (2020), rubric design is able to measure the collaboration skills that the students develop during the assessment.
Performance based assessment	The tasks assigned by the lecturers that enable the students to demonstrate their abilities will cause the students seek sources and information to complete the assignment (Khattri, Kane and Reeve, 1995).	Khattri, Kane and Reeve (1995) states that the performance-based assessment able to promote collaboration, critical thinking skills and multidisciplinary understanding.
Portfolio assessment	Portfolio assessment provides students the opportunity to have extensive input in the learning process (Mhlauli and Kgosidialwa, 2016).	"Students view portfolio as beneficial in developing variety of skills such as critical thinking, IT skills, collaboration analytical, communication…" (Mhlauli and Kgosidialwa, 2016).
Learner self-assessment	Self-assessment able to enhance the potential of learner development to lifelong learning in students (Sharma *et al.*, 2016).	It stimulates to exercise a variety of learning strategies and higher order thinking skills (Abdel Khalek El-Koumy, 2010). Positive relationship between self-assessment and communication skills (Price, Pierson and Light, 2011). Cognitive skills able to be develop through self-assessment (Cassidy, 2006).
Peer assessment	Peer assessment process foster future learning and able to transform students from receiver of knowledge to active learner in the learning process (Alzaid, 2017).	Peer assessment able to help in the development of the high order thinking, collaboration skills, communication skills (Tighe-Mooney, Bracken and Dignam, 2016).
Student response system assessment	Student response system assessment approach able to stimulate the interest of students and improve the depth of learning (Barr, 2014).	Effective communication skill can create through discussion and assist students develop critical cognitive skill and cooperative skill through student response system assessment (Shaeri, Hossain and Rahman, 2015).

Based on the multiple types of assessment used in HEIs including technical courses, it is essential to ensure all technical students understand the concept of formative assessment before using it in the learning process. Once they understand, they can fully utilize the function of each assessment to maximize their capabilities as a fresh graduate later. To achieve this, the following objectives need to be fulfilled, (i) determine students' understanding of the various types of formative assessment and (ii) and their assessment preference for better employability skills.

METHODOLOGY

Research Design

Quantitative methods will be used to obtain the results of this research. The quantitative method that will be used is the questionnaire survey where close-ended questions will be designed to get the results.

Selection of Respondents and Sampling

As for the sampling method, the non-probability sampling method is chosen (ie purposive sampling). Purposive sampling is defined as the strategy used in particular settings on persons or events that are selected deliberately to obtain the necessary information (Taherdoost, 2016). It is also known as judgemental sampling (Taherdoost, 2016). Within this context, the target sampling is the from 1st year to 4th-year students who are currently pursuing Bachelor Degree in Quantity Surveying (Hons) in Tunku Abdul Rahman University College. It is believed that they can impart a good input for this paper because their feedback towards learning assessment can develop constructive feedback for both teachers and students. Thus, a set of questionnaires will be distributed to the 100 respondents under two-phase which is on 1st November of 2020 and 15th November of 2020. Out of 100 sets of questionnaires sent to the respondents through Google Form, only 90 sets were returned for the analysis.

Data Collection

The questionnaire consists of three sections. **Section A** will discuss the demographic information of the respondents. Meanwhile, **Section B** will discuss the level of understanding of students on the various types of formative assessment. **Section C** will discuss their preference on the types of formative assessment to be used for their technical courses, for better employability skills.

Pilot Test

A pilot study is a pre-test conducted to test the research protocols, data collection instrument, sample testing strategies before carrying out the actual test (Fraser *et al.*, 2018). It is an important step to help to identify the deficiencies of the research instrument before the actual test is conducted in full scale (Fraser *et al.*, 2018). Researchers can through the results of the pilot test make necessary adjustments for example the design of questions in the questionnaire to suit more the criteria of the research purpose (Fraser *et al.*, 2018). To determine the feasibility of this research protocol, the first step that will be carried out is to design the questions to be asked in the questionnaire, followed by recruiting the subjects to be tested. Since there is no provision of research study that is being found on the pilot test on the bachelor degree of quantity surveying students that related to the assessment, thus according to (Connelly, 2008), the pilot test sample should be 10% of the sample size of the research study. Hence, the subjects to be tested would involve 10 number of 4th Year students who are willing to participate as the sample size is predetermined as 100. The results from the questionnaire can help to test whether the questionnaire designed is comprehensible, appropriate, well defined and clearly understood by the respondents.

Data Analysis

Section A of the questionnaire on the demographic of the respondents, frequency analysis and pie charts are used to present the data. For Section B and C of the questionnaire, frequency analysis is conducted to present the results of the data obtained through pie and bar charts.

The techniques that are going to be used to analyse the data from the questionnaire for the first two objectives will be conducted through Microsoft Excel and Statistical Package for Social Science (SPSS) to perform the descriptive and frequency analysis. The results obtained from these analyses can be tabulated and presented in the form of tables and charts. The data received that tabulated in these manners can allow easy understanding for the readers.

RESULTS AND DISCUSSION

Demographic Background

For this section, the demographic background of the respondents are discussed, which includes gender, the year of studying in Tunku Abdul Rahman University College, type of learner and the preferred learning style.

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TABLE 2
Gender

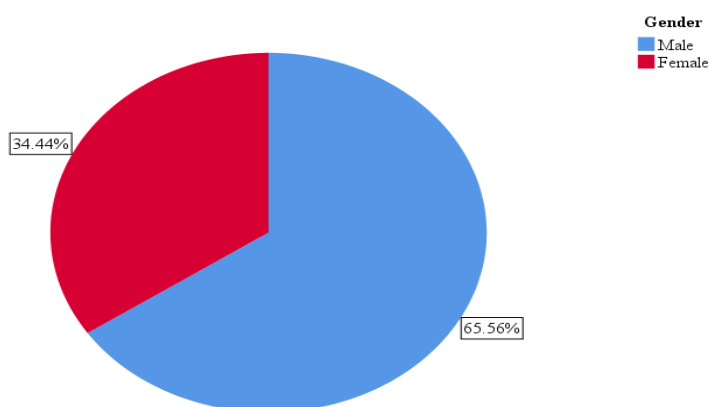|		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Male	59	65.6	65.6	65.6
	Female	31	34.4	34.4	100.0
	Total	90	100.0	100.0	

Figure 1: Gender

The Figure 1 and Table 2 above showed the gender distribution among the respondents. It shows that the male respodents are 57 (65.6%) and the femeale respondents are 33 (34.44%) that have answered the questionnaire.

TABLE 3
Year of Study

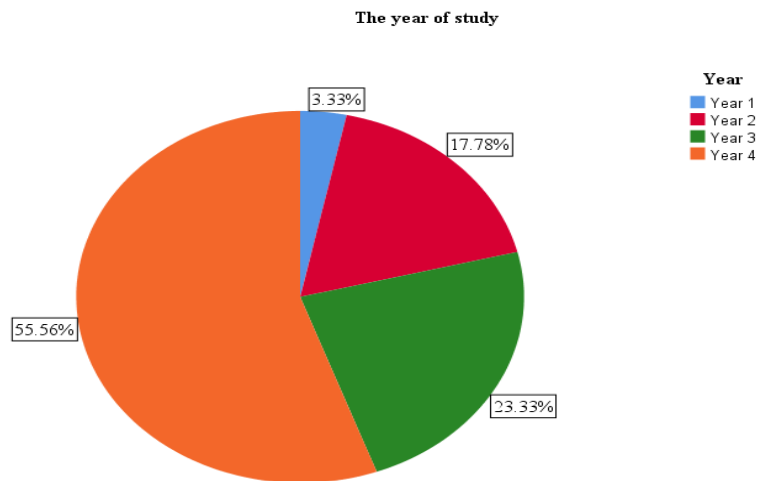|		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Year 1	3	3.3	3.3	3.3
	Year 2	16	17.8	17.8	21.1
	Year 3	21	23.3	23.3	44.4
	Year 4	50	55.6	55.6	100.0
	Total	90	100.0	100.0	

Figure 2: Year of Study

Figure 2 and Figure 3 have shown the distribution of the year of the Bachelor Degree of Quantity Surveying (Hons.) students that have answered the questionnaire. It can be noticed that the Year 4 students are the most where is 50are55.56%), followed by Year 3 with 21 (23.33%), then Year 2 with 16 (17.78%) and finally Year 1 with the least amount among the random respondents which is 3 (3.33%).

TABLE 4
Type of Learners

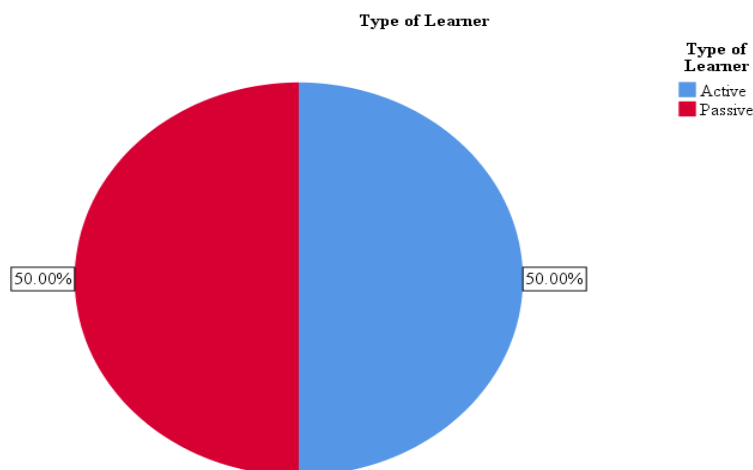|		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Active	45	50.0	50.0	50.0
	Passive	45	50.0	50.0	100.0
	Total	90	100.0	100.0	

Figure 3: Type of Learners

Based on Figure 3 and Table 4, the respondents that have answered the questionnaire are to be found to have an equal amount in between the active and passive learner which is 45 (50%).

TABLE 5
Types of Learning Style

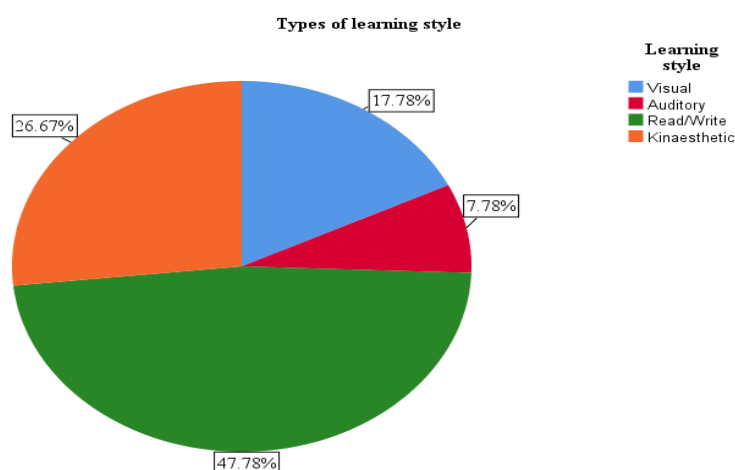|		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Visual	16	17.8	17.8	17.8
	Auditory	7	7.8	7.8	25.6
	Read/Write	43	47.8	47.8	73.3
	Kinaesthetic	24	26.7	26.7	100.0
	Total	90	100.0	100.0	

Figure 4: Type of Learning Style

Both Table 5 and Figure 4 have reflected that the reading style learner is the most among the respondents which is almost half the amount of the collected respondents at 43 (47.78%), followed by those that reckon themselves to be kinaesthetic learner, 24 (26.67%), continue with visual learner which is 16(17.78%) and then finally auditory learner 7 (7.78%).

To Determine Students' Understanding of the Concept of Formative Assessment

For this section, there are five (5) questions were issued to the respondents. It can be categorized into the following coding:

TABLE 6
Coding for the Independent Variables

Section B	
K01	Do you know that rubrics, performance based assessment, portfolio assessment, peer assessment, self-assessment and student responsive system/ Kahoot is a form of formative assessment?
K02	Do you know formative assessment actively involve the students in the learning process?
K03	Do you know formative assessment is a student-centred assessment?
K04	Do you know receiving effective feedback plays an important role in a formative assessment?
K05	Do you know that formative assessment can help in developing your employability skills?

Based on the data collected on the respondents' responses to the questions asked on their knowledge of formative assessment, it was found that overall the respondents do understand the idea and purpose of the implementation of the formative assessment. It was proven in the high response rate on "Yes" on every question by the respondents, in **K01**-80 (88.89%), **K02**-78 (86.67%), **K03**-75 (83.33%), **K04**-82 (91.11%) and **K05**-73

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(81.11%). This result can be well explained through the research done by (Nelson and Restrepo, 2013). The student's believed that the assessment might help them to identify their strengths and weaknesses and learning the method on how to achieve success (Nelson and Restrepo, 2013). Further results can be seen as below:

Do you know that rubrics, performance-based assessment, portfolio assessment, peer assessment, self-assessment student responsive system/ Kahoot is a form of formative assessment?
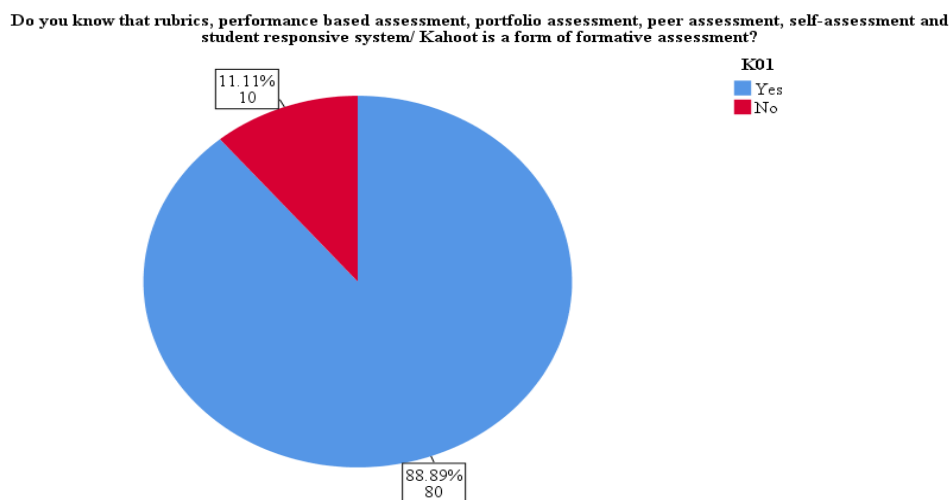

Figure 4: K01

It was found out that the majority of the respondents, 80 (88.89%) have familiarised themselves with rubrics, performance-based assessment, portfolio assessment, peer assessment, self-assessment and student responsive system/ Kahoot is a form of formative assessment. Meanwhile, only 10 (11.11%) did not know about the emergence of various types of assessment.

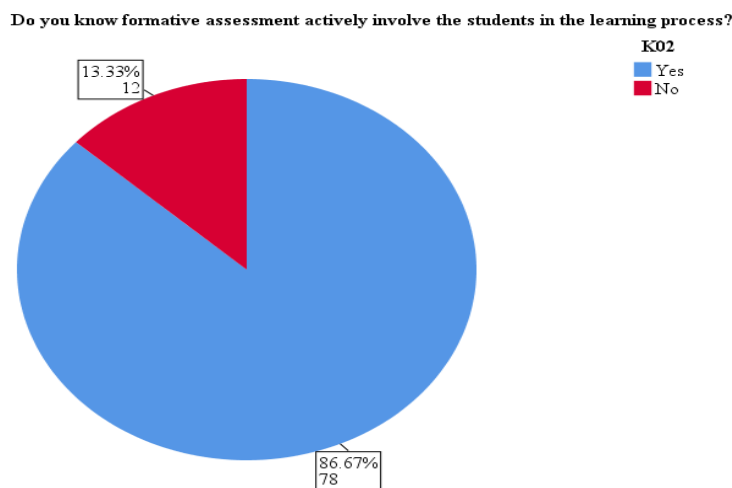Do you know formative assessment actively involve the students in the learning process?

Figure 5: K02

Figure 5 above indicated that the majority of the respondents, 78 (86.67%) aware that formative assessment actively involves the students in the learning process and only 12 (13.33%) that do not knows about it.

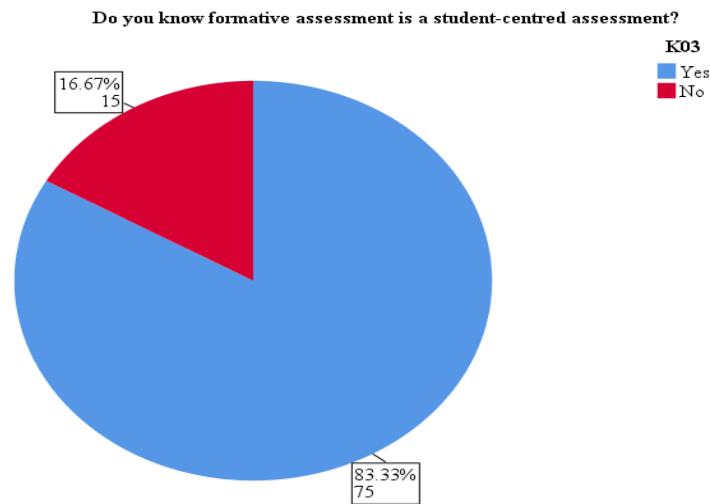Do you know formative assessment is a student-centred assessment?

Do you know formative assessment is a student-centred assessment?

K03
■ Yes
■ No

16.67%
15

83.33%
75

Figure 6: K03

Based on Figure 6 above, showed that the majority of the respondents, 75 (83.33%) knew was a form of student-centred assessment and only 15 (13.33%) out of 90 do not know about it.

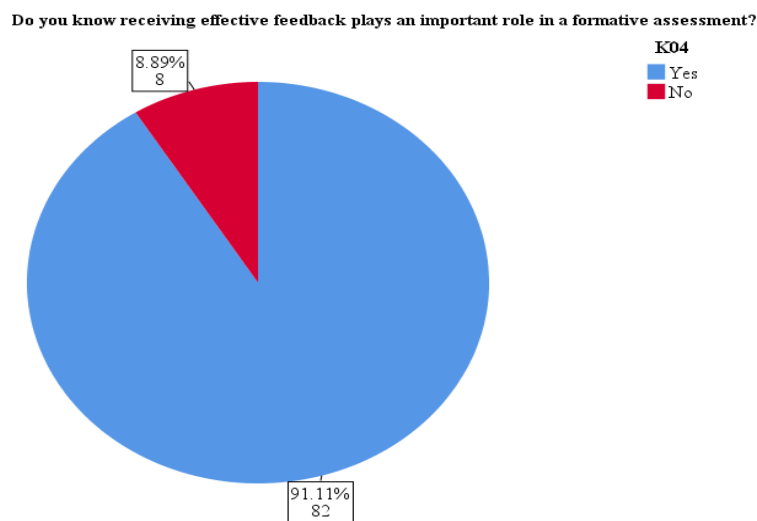Do you know receiving effective feedback plays an important role in a formative assessment?

Do you know receiving effective feedback plays an important role in a formative assessment?

K04
■ Yes
■ No

8.89%
8

91.11%
82

Figure 7: K04

Figure 7 above showed that out of the 90 respondents only 8 (8.89%) do not know that receiving effective feedback plays an important role in the effectiveness of a formative assessment but 82 (91.11%) of them do know about it.

Do you know that formative assessment can help in developing your employability skills
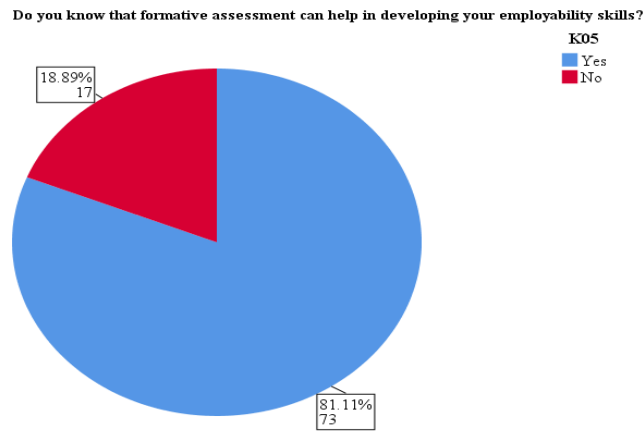
Do you know that formative assessment can help in developing your employability skills?

Figure 8: K05

The re 8 above shows clearly that 73 (81.11%) respondents do know the ugh formative assessment can help them develop their employability skills but still 17 (18.89%) of them do not notice it.

Students' Preference on the Formative Assessment

Which Type of Formative Assessment Do You Prefer to be Evaluated?

Based on Table 7 and Figure below, shows that performance-based assessment is the one being selected that received the most popular among the respondents that have answered the questionnaire. 68 out of 90 of them, (75.56%) prefer to be assessed based on this formative assessment method. It is followed by the self-assessment method that being selected by 39 out of the 90 respondents (43.33%). Student response system (SRS/ Kahoot) is being ranked third among the choices of formative assessment which had received 36 out of the 90 respondents (40%) select it as one of their favourite formative assessment. It is followed by a rubric assessment that has s difference by one, which is 35 out of 90 (38.89%) pick it as the formative assessment method that they prefer the lecturer will use to assess the progress of their studies. Then, it is followed by a portfolio assessment that is chosen by 28 out of 90 respondents (31.11%). Peer assessments have become one that least preferred by the respondents, only 21 out of 90 (23.33%) of the respondents have chosen it. Hence, based on the results of the questionnaire, a performance-based assessment that has the combination of both written test and assignment assessment which received the majority popularity among the respondents can be considered by the HEIs to use it as their main formative assessment. The reason performance-based assessment received more popularity may due to its advantages stated in Table 7 for example allow students to express themselves freely (Price, Pierson and Light, 2011), involve students directly and deeply (Espinosa, 2015; Stiggins, 2001), etc.

TABLE 7
Which Type of Formative Assessment Do You Prefer to be Evaluated?

Types of formative assessment	Frequency	Percentage (%)	Ranking
Rubric	35	38.89	4
Performance-based assessment	68	75.56	1
Portfolio assessment	28	31.11	5
Self-assessment	39	43.33	2
Peer-assessment	21	23.33	6
Student response system(SRS/Kahoot)	36	40.00	3

Which Type of Formative Assessment Do You Find Effective in Helping You to Achieve Better Academic Performance?

Table 8 and Figure have reflected that performance-based assessment is the one that has been chosen the most by the 90 respondents, 59 (65.56%) of the respondents have pointed out that performance-based assessment can help them perform well academically. It is followed by self-assessment that ranks second, 36 out of 90 of the respondents (40%). Then, it is followed by the rubric, 31 out of the 90 respondents (34.44%) and student response system, 27 out of the 90 respondents (30%) in the rankings when based on the responses respectively

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received by the respondents on the formative assessment methods that they pick as the ones that can help them achieve better academically. Then, it is followed by the portfolio assessment method that 24 out of the 90 respondents (26.67%) has rated as the formative assessment that can help them achieve better performance in their academic studies. Lastly, it is peer assessment: only 17 out of the 90 respondents (18.89%) have chosen it as the formative assessment method that can help them out in their academic performance or studies. Based on the results, the programme leader or assessors can consider using the performance-based assessment in their courses assessment to evaluate the students as it can help them academically in the results of their performance. The reason for performance-based assessment being the most picked assessment because it comprises of both formative and summative assessment as stated by (Banta, Palomba and Kinzie, 2014) which the students are more familiarise with the assessment method.

TABLE 8
Which Type of Formative Assessment Do You Find it Effective in Helping You to Achieve Better Academic Performance?

Types of formative assessment	Frequency	Percentage	Ranking
Rubric	31	34.44	3
Performance-based assessment	59	65.56	1
Portfolio assessment	24	26.67	5
Self-assessment	36	40.00	2
Peer-assessment	17	18.89	6
Student response system(SRS/Kahoot)	27	30.00	4

Which Type of Formative Assessment do You Find Effective in Developing your Employability Skills?

The Ta9 and Figure above show that performance-based assessment, 60 (66.67%) out of 90 respondents is the most pick formative assessment that the respondents find effective in helping them to develop the employability skills. It is followed by portfolio assessment at the amount of 41 (45.56%) out of 90 respondents has picked it. Then, it is subsequently followed by self-assessment and peer assessment, both have been pick by 35 (38.89%) and 23 (25.56%) out of the 90 respondents respectively. A rubric is the second least effective in picking up employability skills in the opinions of the respondents as only 19 out of 90 respondents (21.11%) has chosen it. Furthermore, based on the results show in the table and chart students response system (SRS)/ Kahoot is the least effective in helping the respondents in developing their employability skills which at the amount of 13 (14.44%) out of the 90 respondents.

Hence, based on the results, the performance-based assessment and rubric assessment that has been implemented by the HEIs has been effectively done in helping the students develop their employability skills. These two formative assessments are most commonly used by the lecturers, thus it is no surprise that the respondents can benefit from them the most.

TABLE 9
Which Type of Formative Assessment Do You Find it Effective in Developing Your Employability Skills?

Types of formative assessment	Frequency	Percentage (%)	Ranking
Rubric	19	21.11	5
Performance-based assessment	60	66.67	1
Portfolio assessment	41	45.56	2
Self-assessment	35	38.89	3
Peer-assessment	23	25.56	4
Student response system(SRS/Kahoot)	13	14.44	6

What Skills Has Been Acquired by You During the Formative Assessment?

The results of the collected questionnaire can be seen in Table 10 on the skills that have been acquired by the 90 respondents during the process of the formative assessment are in the sequence of ranking Problem-solving skills, 78(86.67%), 2) Critical thinking skills, 71 (78.89%), Decision-making skills, 69 (76.67%), 4) Communication skills, 60 (66.67%), 5) Analytical skills, 56(62.22%), 6) Self-assessing skills. 48(53.33%), 7)

Observational skills, 47(52.22%), 8) Discussion skills, 45(50%), 9) Judgemental skills, 43(47.78%), 10) Collaboration skills, 41(45.56%), 11) Creativity, 39(43.33%), 12) Cognitive skills, 30(33.33%), 13) IT skills, 28(31.11%), 14) Peer-assessing skills, 24(26.67%).

Based on the findings, the formative assessment that has been implemented by the HEIs has been effectively developing the problem-solving skills, critical thinking skills decision-making skills of the respondents. However, the improvement on the design of the formative assessment by the HEIs programme needs to be done to allow the respondents to have better enhancement on their cognitive skills, IT skills and peer-assessing skills, especially cognitive and IT skills. Cognitive skills and IT skills are very vital skills as the future working environment demand the graduate to be more cognitive on its ability, strength and weakness especially in the fast-evolving technology society so that they can be more versatile and adaptable to the changing nature of the career role and responsibilities.

TABLE 10
What Skills that Has Been Acquired by You During the Formative Assessment?

Types of skills	Frequency	Percentage (%)	Ranking
Communication skills	60	66.67	4
Critical thinking skills	71	78.89	2
Self-assessing skills	48	53.33	6
Collaboration skills	41	45.56	10
Cognitive skills	30	33.33	12
Decision making skills	69	76.67	3
Problem solving skills	78	86.67	1
Discussion skills	45	50.00	8
Creativity	39	43.33	11
Analytical skills	56	62.22	5
Peer-assessing skills	24	26.67	14
IT skills	28	31.11	13
Observational skills	47	52.22	7
Judgemental skills	43	47.78	9

CONCLUSION

In conclusion, it can be seen that the first objective of the paper was achieved when the majority of the QS students from TARUC understand the idea and purpose of implementing the formative assessment based on the high response rate. Meanwhile, as for the second objective, it was reported that the performance-based assessment (65.56%) is the most preferred formative assessment by the respondents and they believed that it will help them to achieve a better result not only in academic performance but most importantly in acquiring the employability skills such as problem-solving skills, critical thinking skills, decision making skills, etc. Hence, formative assessments can effectively benefit them for their individual development. Based on these results, it showed that further research is needed to be implemented in findings ways to design a constructive assessment for the core subjects. Via an appropriate assessment, it may assist lecturers of technical courses to boost their students' learning performance and generate the employability skills demanded by employers.

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