

A Proposed Evaluation of Online Learning Tools Used in the Junior High School Department of Nueva Ecija University of Science and Technology - San Isidro Campus for Academic Year 2020-2021

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Abstract:- For a long time, the pen and paper test was the practice in administering evaluation; this validates teaching effectiveness. As technology keeps evolving, interactive learning platform has come to rise. There are numerous assessment tools developed to facilitate assessing instruction in a fun and interactive way. This study aims to determine which evaluation tools are applicable for use to the Junior High School students of Nueva Ecija University of Science and Technology- San Isidro Campus in assessing their learning outcomes, and to evaluate the significant differences between Quizziz, Quizlet, and Socrative formative assessment applications, and propose assessment application applicable to the Junior High School Department. The study used a descriptive research design and total sampling. The collection of data was done online using Google Forms Application. In analyzing the collected data, the Likert scale was utilized, requiring the respondents' perceptions and opinions based on their experience in ten statements. In analyzing the collected data, the Likert scale was utilized, requiring the respondents' perceptions and opinions based on their experience in ten statements. Based on the result, most of them choose Quizziz over Quizlet, Socrative, and paper and pencil. The computed difference on the mean from among the three assessment tools was significant. Therefore, the Quizziz application as an online learning tool for the Junior High School students of the said University was recommended.

Keywords:- Appraisal Tool; Online Learning; Interactive Assessment; Quizziz; Quizlet; Socrative.

I. INTRODUCTION

According to Briggs (2020), technology in education represents meaningful roles and creates lasting transformation especially during the emergence of the global pandemic. It brought major developments, especially in the education sector. The battlefield in learning is significantly changing, and researches show the importance of student engagement in learning. Because of COVID 19, many are in panic mode, particularly the academic institution in terms of delivering instructions amidst the situation. Being unprepared took its toll especially in this new mode of learning. According to Robles & Braathen (2002), online learning is here to stay. It is replacing many traditional classroom settings and is changing how we teach. Most educators are in constant pursuit of how to be effective online instructors (Sewell, Frith, & Colvin, 2010). Both learners and educators are adjusting as to how educators deliver their lessons, how the students will learn, and how to monitor their learning progress.

A crucial part of today's situation is to start embracing online learning and assessment. According to the study of Swan, Shen, & Hiltz. (2006), in most online courses, traditional instructor-centered examination remains the primary means for assessing student performance. Learning-focused still traditional-based educational practices (Hricko & Howell, 2006).

The purpose of this study is to introduce an evaluation tool fitted to the Junior High School students of Nueva Ecija University of Science and Technology, San Isidro Campus, that can be used in assessing instruction in a fun, interactive, easy way that are free of charge. There are many online assessment tools to determine the level of knowledge and understanding of learners. Socrative and Quizlet are just a few. The article from (www.crunchbase.com) introduced

Quizlet as a learning platform that uses activities and games to help students practice and master their learning. Socrative, a cloud-based student response system, allows creating a simple classroom setup and database of quizzes, tests, surveys, and team activities free for all learners to use. Quizziz, another student-paced formative assessment, allows learners to engage to an in-class quiz game. As mentioned earlier, these learning tools are subject for assessment and are recommended for use Junior High School online classes in Nueva Ecija University of Science and Technology, San Isidro Campus.

II. OBJECTIVES OF THE STUDY

Implementing new technology demands strong structure, retraining, and attention to detail are the main focus of development. In academe, an assessment is carried out during the instructional process to improve teaching or learning. This study aims to determine which online learning tools are applicable for use among the junior high school students of NEUST- San Isidro Campus in assessing their learning outcomes. Specifically, this study aims to determine the differences between Quizziz, Quizlet, and Socrative formative assessment applications. Lastly, this aims to propose appropriate online learning tools suited to assess student's learning.

III. METHODOLOGY

Study Design and Location. A descriptive research design was used to assess the following online learning tools that can be used in online classes such as the Quizlet, Socrative and Quizziz for the junior high school students of Nueva Ecija University of Science and Technology, San Isidro Campus.

Sample and Sampling. Total sampling or all of the high school students of Nueva Ecija University of Science and Technology San Isidro Campus served as respondents.

Devices and Applications. The devices used were the smartphone, laptop, tablet, desktop computer. The Quizlet, Socrative, and Quizziz, both web-based and mobile-based applications, were utilized in assessing student performance and progress.

Instrumentation and Data Collection. The questionnaire made was based on the work of Lee and Cherner, (2015) Sauro and Zarolia (2017) and Basuki and Hidayati, (2019). The questionnaire was modified for content and wording appropriateness following an extensive review of the literature published and expert opinions in English. Since the respondents were junior high school, the Filipino version of the item statements was also provided which was checked by a Filipino teacher. The questionnaire was made up of three major parts: the first part comprised of questions regarding socio-demographic status (electronic device or devices they use in the online class, number of hours they use electronic devices, their internet provider and strength of their internet connection); the second part which is about the description of their experience using the different assessment tools in answering an activity or a quiz and their comments regarding the use of that particular application in assessment; the third part was about the preferred assessment tools by the respondents' that will be utilized in the classroom and their comments or suggestion regarding the use of the different assessment tools in an online class. Before its use in the main study, the questionnaire was pre-tested among the students of the said campus which were not included in the final analysis. Due to the community quarantine being implemented in the entire country, the gathering of data was done online using Google form as the questionnaire and was sent via Facebook messenger Group chat.

Ethical Consideration. Informed consent was given first before the respondent answer the questionnaire. Since all the respondents are of minor age, informed consent was first sent or given to their parent or guardian.

Data and Statistical Analysis. To analyze the collected data from the questionnaires, the researchers use the Likert scale requiring the respondents' perceptions and/or opinions based on their experience in the form of ten statements (Riduwan et al., 2008); Strongly Agree (SA), Agree (A), Somewhat agree (SWA), Disagree (D), and Strongly Disagree (SD) of the 124 respondents toward Quizlet, Socrative and Quizziz's efficacy (Q1), their choice among Quizlet, Socrative and Quizziz and the reasons for their choices. To determine the difference among Quizlet, Socrative and Quizziz, Analysis of Variance (ANOVA) was computed. All completed questionnaires were double-checked and verified for completeness and consistency. The data from the Google form was then opened in Microsoft Excel and treated using Statistical Packages for Social Sciences (SPSS).

Socio-Demographic Profile		Frequency	Percentage
Electronic Devices	Android phone	117	94.40%
	Laptop	28	22.60%
	Desktop	11	8.90%
	Iphone	10	8.10%
	Tablet	8	6.50%
Number of Hours they Used Electronic Devices	1 hour	3	2.40
	2 hours	7	5.60
	3 hours	5	4.00
	4 hours	15	12.10
	5 hours	16	12.90
	6 hours	13	10.50
	7 hours	1	0.80
	8 hours and above	64	51.60
Internet Connection	Wired connection (PLDT, Converge, Globe, Smart, etc.)	76	61.30
	Prepaid (Wireless connection)	44	35.50
	Postpaid (Wireless connection)	4	3.20

Table 1:- Profile of the Respondents

Table 2 presents the internet connectivity as perceived by the respondents. Based on the result, the average internet connectivity perceived by the respondents' was 5.81, which implies that their internet connection as a whole is in the midline of having a weak and robust connection. In the

recent internet speed test done last April 2020 by the OOKLA's Speedtest Global Index, the Philippines ranked 121st out of 139 surveyed countries in mobile internet speed and 110th out of 174 in fixed broadband internet speed.

Internet Connectivity	Frequency	Percentage	Average
10	1	0.80	5.81
9	7	5.60	
8	12	9.70	
7	16	12.90	
6	25	20.20	
5	12	9.70	
4	19	15.30	
3	19	15.30	
2	7	5.60	
1	6	4.80	
Total	124	100	

Legend: 10 – Strong connection; 1 Weak connection

Table 2:- Status of the Internet Connectivity of the Respondents

Table 3 shows the respondents' experience using Quizlet as an online learning tool. They agreed that Quizlet has an attractive feature, and the language used can be easily understood. They somewhat agree on other statements such

as the ease, excitement, enjoyment of answering an exam, the problems or bugs it causes in their device, and its graphic and interface. The average weighted mean obtained was 3.32 with a verbal description as "Somewhat agree."

Item Statements	Weighted Mean/ S.D.	Verbal Interpretation
1. I found Quizlet easy to use in answering an exam. (<i>Napag-alaman ko na madaling gamitin ang Quizlet sa pagsagot sa pagsusulit</i>)	3.27 ± 1.01	Somewhat agree
2. I enjoy answering exam in Quizlet. (<i>Ako ay natuwa sa pagsagot ng exam sa Quizlet</i>).	3.39 ± 0.94	Somewhat agree
3. I felt very confident using Quizlet in exam. (<i>Ako ay kumpanyansa sa pagsagot ng exam sa Quizlet</i>)	3.17 ± 0.97	Somewhat agree
4. Using Quizlet in answering an exam was exciting. (<i>Ang paggamit ng Quizlet sa pagsagot sa exam ay exciting</i>)	3.28 ± 0.87	Somewhat agree
5. I am motivated on Quizlet’s graphic and interface. (<i>Ako ay motivated sa graphic at interface ng Quizlet</i>)	3.30 ± 0.95	Somewhat agree
6. I found Quizlet attractive. (<i>Napag-alaman ko na ang Quizlet ay kahanga-hanga</i>)	3.48 ± 0.97	Agree
7. The language used in Quizlet is easily understood. (<i>Ang wika na ginamit sa Quizlet ay madaling maintidihan</i>)	3.82 ± 0.94	Agree
8. Quizlet runs without bugs or errors. (<i>Ang Quizlet ay gumagana nang walang bug at error</i>)	3.15 ± 1.11	Somewhat agree
9. Quizlet does not cause problems on my device. (<i>Hindi nagdudulot ng problema ang Quizlet sa aking device</i>)	3.30 ± 1.07	Somewhat agree
10. I like answering an exam thru Quizlet. (<i>Gusto kong magsagot ng exam sa Quizlet</i>)	3.05 ± 1.07	Somewhat agree
Grand Weighted Mean	3.32 ± 0.74	Somewhat agree

Legend: S.D. = standard deviation; 5.00 – 4.21 = Strongly Agree; 4.20 – 3.41 = Agree; 3.40 – 2.61 = somewhat agree; 2.60 – 1.81 = disagree; 1.80 – 1.00 Strongly disagree.

Table 3:- Respondent’s Experience Using Quizlet

Table 4 shows the respondents’ experience using Quizziz as an online learning tool. They agree on all the statements such as it is attractive, the ease, excitement and enjoyment of answering an exam, the problems or bugs it

displays while using it in their device, its graphic and interfaces and the language used. The average weighted mean obtained was 3.76 with a verbal description as “Agree”.

Item Statements	Weighted Mean/ S.D.	Verbal Interpretation
1. I found Quizziz easy to use in answering an exam. (<i>Napag-alaman ko na madaling gamitin ang Quizziz sa pagsagot sa pagsusulit</i>)	3.86 ± 0.99	Agree
2. I enjoy answering exam in Quizziz. (<i>Ako ay natuwa sa pagsagot ng exam sa Quizziz</i>).	3.87 ± 0.94	Agree
3. I felt very confident using Quizziz in exam. (<i>Ako ay kumpanyansa sa pagsagot ng exam sa Quizziz</i>)	3.66 ± 0.94	Agree
4. Using Quizziz in answering an exam was exciting. (<i>Ang paggamit ng Quizziz sa pagsagot sa exam ay exciting</i>)	3.74 ± 0.99	Agree
5. I am motivated on Quizziz’s graphic and interface. (<i>Ako ay motivated sa graphic at interface ng Quizziz</i>)	3.80 ± 1.01	Agree
6. I found Quizziz attractive. (<i>Napag-alaman ko na ang Quizziz ay kahanga-hanga</i>)	3.85 ± 0.97	Agree
7. The language used in Quizziz is easily understood. (<i>Ang wika na ginamit sa Quizziz ay madaling maintidihan</i>)	3.94 ± 0.98	Agree
8. Quizziz runs without bugs or errors. (<i>Ang Quizziz ay gumagana nang walang bug at error</i>)	3.49 ± 0.98	Agree
9. Quizziz does not cause problems on my device. (<i>Hindi nagdudulot ng problema ang Quizziz sa aking device</i>)	3.65 ± 1.03	Agree
10. I like answering an exam thru Quizziz. (<i>Gusto kong magsagot ng exam sa Quizziz</i>)	3.74 ± 1.07	Agree
Grand Weighted Mean	3.76 ± 0.79	Agree

Legend: S.D. = standard deviation; 5.00 – 4.21 = Strongly Agree; 4.20 – 3.41 = Agree; 3.40 – 2.61 = somewhat agree; 2.60 – 1.81 = disagree; 1.80 – 1.00 Strongly disagree.

Table 4:- Respondent’s Experience Using Quizziz

Table 5 shows the respondents’ experience using Socrative as an online learning tool. They agree on all the statements such as it is attractive, the ease, excitement and enjoyment of answering an exam, the problems or bugs it

causes in their device, it’s graphic and interfaces and the language used. The average weighted mean obtained was 3.58 with a verbal description as “Agree”.

Item Statements	Weighted Mean/ S.D.	Verbal Interpretation
1. I found Socrative easy to use in answering an exam. (<i>Napag-alaman ko na madaling gamitin ang Socrative sa pagsagot sa pagsusulit</i>)	3.67 ± 1.00	Agree
2. I enjoy answering exam in Socrative . (<i>Ako ay natuwa sa pagsagot ng exam sa Socrative</i>).	3.65 ± 0.93	Agree
3. I felt very confident using Socrative in exam. (<i>Ako ay kumpanyansa sa pagsagot ng exam sa Socrative</i>)	3.55± 0.93	Agree
4. Using Socrative in answering an exam was exciting. (<i>Ang paggamit ng Socrative sa pagsagot sa exam ay exciting</i>)	3.54 ± 0.93	Agree
5. I am motivated on Socrative ’s graphic and interface. (<i>Ako ay motivated sa graphic at interface ng Socrative</i>)	3.46 ± 0.97	Agree
6. I found Socrative attractive. (<i>Napag-alaman ko na ang Socrative ay kahanga-hanga</i>)	3.58 ± 0.90	Agree
7. The language used in Socrative is easily understood. (<i>Ang wika na ginamit sa Socrative ay madaling maintidihan</i>)	3.81 ± 0.96	Agree
8. Socrative runs without bugs or errors. (<i>Ang Socrative ay gumagana nang walang bug at error</i>)	3.47 ± 0.96	Agree
9. Socrative does not cause problems on my device. (<i>Hindi nagdudulot ng problema ang Socrative sa aking device</i>)	3.56 ± 0.97	Agree
10. I like answering an exam thru Socrative . (<i>Gusto kong magsagot ng exam sa Socrative</i>)	3.49 ± 1.06	Agree
Grand Weighted Mean	3.58 ± 0.81	Agree

Legend: S.D. = standard deviation; 5.00 – 4.21 = Strongly Agree; 4.20 – 3.41 = Agree; 3.40 – 2.61 = somewhat agree; 2.60 – 1.81 = disagree; 1.80 – 1.00 Strongly disagree.

Table 5:- Respondent’s Experience Using Socrative

Table 6 shows the respondents’ assessment tools to be utilized in the classroom. Based on the result, the majority of them or 55 (44.40%) choose Quizziz over Quizlet, Socrative and paper and pencil. Meanwhile, Table 7 shows the difference among the respondents’ experience in using online learning tools. The findings show that the perceived description based on respondents’ experience was Quizziz garnered a higher mean in all statements than any mean earned by Quizlet and Socrative. The difference in the mean earned by the three assessment tools has a significant difference (p-value = 0.00) which implies that they differ significantly. The result of the study was also supported by the study of Vincent (2015), Reid (2016) and Basuki and Hidayati (2019). Furthermore, Basuki and Hidayati (2019) added that Quizziz is more engaging for it does not split the students’ concentration during the quiz; it allows the students to see the questions and all possible answers on their own devices and it is likely students self - directed quiz which the students might complete the quiz at their speed and therefore remain highly engaged during the quiz; questions and answers are shuffled for each student and therefore they have no chance to cheat; lastly, it is more entertaining since it has memes, funny pictures shown after each question, as the questions’ feedbacks.

Assessment Tools	Frequency	Percentage	Ranking
Quizlet	7	5.60	4 th
Socrative	30	24.20	3 rd
Quizziz	55	44.40	1 st
Paper and Pencil	32	25.80	2 nd

Table 6:- Respondent’s Suggested Online Assessment Tool

Assessment Tools	Grand Weighted Mean/S.D.	P value
Quizlet	3.32 ± 0.74	0.00*
Quizziz	3.76 ± 0.79	
Socrative	3.56 ± 0.81	

Legend: S.D. = standard deviation; *significant at p ≤ 0.05
 Table 7:- Difference Among the Respondent’s Experience in Using Different Online Learning Tool

IV. CONCLUSION AND RECOMMENDATION

Traditional pen-paper examination remains the primary means of assessing student performance. Assessment is vital to the learners' learning progress; this will determine how the instructor's knowledge was transferred to the learners. However, during this time of online learning, the traditional pen-paper is challenged. Thus, there is a dire need for online assessments. It was found out that the majority of the respondents have Android phone which they are using during an online class, and they use it more than 8 hours a day. Many of them have a wired internet connection, and the internet connectivity they perceived was 5.81, which implies that it is in the midline of having a weak and robust connection. In terms of their evaluation based on their experience in using the different online learning tools, they have positive statements on all the online learning tools.

Based on this study's result, the 124 Junior High School student respondents of Nueva Ecija University of Science and Technology - San Isidro Campus evaluated the functionality of the assessment application Quizzizz, Quizlet, and Socrative. Among the three, Quizzizz obtained the highest mean with a verbal description as "agree". Also, majority of the respondents suggest Quizzizz be used in their online class which was attractive, ease of use, excitement, and enjoyment of answering an examination. The differences garnered by each online learning tool were significant to each other. It only implies that Quizzizz is applicable to be used in junior high school students in their online class. With this, it is suggested that Quizzizz should be used as an online learning tool for the junior high school student of the said University.

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