Correlation of Interactive Learning and Students' Intellectual Emotion

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ABSTRACT

This research aims to explore the correlation between interactive learning methods and students' intellectual emotions conducted on the subject VCS 105 (An appreciation of art and design history), a compulsory subject for the first-semester Diploma of Creative art. This subject requires deep understanding, memorizing art history, facts, and characters of art globally throughout the ages. The biggest problem in teaching and learning in the new norm is attracting attention from students along with the rapid development of technology. As an educator, we need to creatively change the teaching method from traditional method to Online based education. The interactive learning method is proposed as an effective approach to gain a short-term attention span among students. Finally, the researcher can evaluate students' perceptions of learning in class as well as their level of acceptance of the knowledge that has been delivered. In this study, online game-based interactive learning has been specially designed creatively to obtain the extent of the effectiveness of teaching and learning. The researcher used the Quiz Whizzer online application as a main pillar of this study. Quiz Whizzer is a website-based application as an online educational game that provides easy means in the learning process. Furthermore, Quiz Whizzer is a game-based learning platform, used as educational technology in educational institutions. The focus of this activity is the use of making interactive games, developing social skills, and relationships among group members. This gamification creatively combines the technology of QR codes to solve the puzzle online. The implementation of interactive learning, not only develops the interpersonal relations between students but also demonstrates their active participation in class. The findings of this study demonstrated that these students have a positive attitude toward learning. For instance, they believe that applying interactive learning such as online games in a subject will improve their knowledge. Most importantly, the result of this study revealed the effectiveness of interactive learning in relation to the intellectual emotion of students.
Keywords: Interactive learning, Online game-based, Intellectual emotion.

1. INTRODUCTION

When the pandemic Covid 19 hit the world, the pedagogy and approach in education drastically changed due to the effect of global health issues. Teaching and learning are totally based on an online basis and facing a severe problem which is students have a short-term attention span, minimal feedback and, this theory subject has too many facts and terms to study. The covid-19 pandemic has further opened a fresh chapter in the education sector, which forces the education sector to become more creative with friendly technology (Mohamad Quzami & Shahrunizam Sulaiman, 2021).

Nowadays, teaching the history of art and design subjects has become more challenging in line with the rapid evolution of technologies. Boudadi and Gutierrez-Colon (2020), stated that nowadays educators are educating a generation of students who have more access to technology, media, information, and communication than any previous generation.

According to Dimock M. (2019) The consequences of growing up in an "always on" technological environment are only now becoming clear. The implications of this technology have a huge impact on the lives of Generation z, which was born around the year 2000. They are exposed to a wide range of information that is easily accessible without the need for educators, as was the case with traditional teaching methods. To be sure, this generation's perspectives are not fully formed and may change significantly as they age and as national and global events intervene. Nonetheless, this early look provides some intriguing insights into how Generation Z will shape the landscape of higher education in the future.

Therefore, Conventional teaching approaches in general are considered less relevant when applied to this technologically savvy generation. Based on this problem, learning methods should be improved to ensure that student enjoys their learning.

2. LITERATURE REVIEW

2.1 Interactive Learning

Interactive learning is a technique that seeks to get students actively engaged in the learning process, often through the use of technology. This is in contrast to more passive techniques like the traditional lecture. ("What is interactive learning?" 2022)

According to Silverthorn, D. U. (2006), technological advancements have begun to change how students acquire facts in the last 30 years. They no longer need to rely on the teacher to tell them what they should know. Students, too, have evolved over the last 30 years. Our current students grew up with computers. They've grown up with the internet, smartphones, videos, and CDs, but they've probably never seen a typewriter. Students nowadays are more likely to google or visit Wikipedia to learn something than to pull a book from a shelf. This means that we are teaching a generation whose perspective on information access and transfer differs dramatically from that of their older educators.

We, as educators, must now understand that our students no longer have to depend on us for the acquisition of information, which may be one reason some lectures report low attendance in class. Therefore, educators must also change drastically in accordance with the change in the current of education globally. We must take appropriate steps to pique students' interest so that they will attend lectures.

According to S. Senthamarai (2018), In interactive teaching and learning Students will use their personal and social capabilities to collaborate with others in learning activities, recognize their own strengths and abilities as well as those of their peers, and develop a variety of interpersonal skills such as communication, negotiation, teamwork, leadership, and an appreciation for diverse perspectives.

Interactive teaching and learning involve educators and learners such as: -
1. encourage and expect learners to participate,
2. use questions to stimulate discussion, emphasizing the importance of answers
3. Give participants hands-on experience
4. Engages the pupils in their learning
5. It is organized to meet objectives
6. Builds on existing skills

7. Allows for a variety of learning styles
8. Cultivates transferable, independent learning.

According to Achilova Sohiba & Haydaroba Namuna (2021), The word "interactive" is derived from the English word "Interact", which means "interaction", "act" - "action", "influence", and "activity". Interactive methods are methods that allow students to interact and interact with the learning process. When organizing the teaching process on the basis of interactive methods, the student's interaction increases and the skills of cooperation and creativity are formed. Moreover, skills of independent work with the content of the subject in the textbook are formed and students become independent reading, work, mastering the content of education, the text becomes a daily personal affair.

Implementing interactive learning, such as online games, may psychologically motivate students to be more interested in learning art history. In addition, this method is also expected to give a new perception to students so that they are more enthusiastic to learn.

Last but not least, according to Carlson et al. (2017), adding fun to game activities, helps to motivate players and increase interaction, which leads to positive behavioural outcomes by practicing real life situations and challenges.

2.2 Online Game-Based Learning in Education

Online games-based used in interactive learning and is one of the new approaches in art and design subject to help students to remember the history of art in general. According to Deterding et al. (2011), Online games has applied to be a new method in the history of education. It has started to be used in multidiscipline to enhance and encourage students more interested in the learning process.

Online games-based learning is a new approach in art and design subjects to help students to remember the history of art in general. According to Neil A. Bradbury (2016), the implementation of multiple approaches should apply not only to remember material but also to have a deep understanding of physiological mechanisms and be able to utilize such knowledge in various applications.

According to Furdu, Tomozei and Kose (2017), online game-based learning as one of interactive learning appears to be a new approach that has started to be used in a variety of disciplines to enhance and motivate learning, it incorporates fun into learning activities. Game-based learning is easy to implement as it only focuses on specific goals that must be achieved in a specific area. It does not require students to have toys or any specific electronic devices. Moreover, it also not replaces the learning process itself, but it helps to make learning a more collaborative activity. Gamification enhances motivation and engages learners cognitively and behaviourally and emotionally which will facilitate the learning process of students. Çeker and Ozdami (2017) believed that through online games based on learning, the student could understand the knowledge from a different perspective and be more creative.

Treiblmaier and Putz (2020), stated that gamification works as an important element for the impact of basic motivation for learning as it helps learners to feel pleasure, be friendly and imaginative, and be self-actualized. Online game-based classes basically motivate students because of the decision-making processes involved in learning; fun because goals allow students to see the direct impact of their efforts by instant feedback offered; authentic because fantasy provides a compelling background that allows students to experiment with skills without suffering the consequences of failure in real life. On the other hand, gamification can increase their social value as they must cooperate with their group members. Najjar and Salhab (2022), believed that gamification influences motivation positively by offering competition, challenge, and socialization elements.

Additionally, online game-based interactive learning has a highly positive impact on students. Based on several studies from (Zainuddin et al., 2020; Amado, & Roleda, 2019) supported this position that gamification increases student engagement and has positive effects on students' behavioural, emotional,

and cognitive engagement through the features it offers like persistence, time-on-task, flow, immersion, and commitment.

Moreover, according to Carlson et al. (2017), adding fun to game activities, helps to motivate players and increase interaction, which leads to positive behavioural outcomes by practicing real life situations and challenges.

2.3 Intellectual Emotion

According to Cambridge Online Dictionary (2023), emotion is a strong feeling such as love or anger, or strong feelings in general. While Intellectual means a very educated person who is interested in complicated ideas and enjoys studying and careful thinking.

On the other hand, Sohiba A. & Namuna H. (2021) believe that the essence of intellectual emotion is that it becomes a driving force in a person's mental activity. Attitudes toward the successes and failures of cognition represent intellectual, that is, mental, emotions. Appropriate use of interactive methods in the educational process in this regard leads to the emergence of students' emotions, in particular, a strong internal desire to learn strong emotions, the ability to think independently, and to act independently. It creates a desire to collaborate on knowledge. In the process of learning, intellectual experiences play a special role, and the development of intellectual emotions during the educational process is an important factor in completing the teacher's cognitive tasks.

Considering the guidelines provided by Malaysia's Ministry of Education (KPM), Education in Malaysia is a continuous effort towards further developing individual potential comprehensively and integrated to create a balanced and harmonious human being in terms of intellect, spirituality, emotion, and body, based on and obedience to God. The goal of this initiative is to create Malaysian people who are knowledgeable, skilled, kind, responsible, and able to achieve personal well-being, while also enhancing personal, societal, and national harmony.

As a result, it is clear that intellectual and emotional factors are key in the endeavour to develop useful and quality people in the future.

3. METHODOLOGY

In order to evaluate the effectiveness of games in the subject, a quantitative technique was utilized in data collection via reports from the game. There were 137 students participated in this study, with 68 groups competing in the race game used in this interactive learning.

3.1 Literature Review

This study has used 3 main methods to collect information. The first method is through comprehensive research on the effectiveness of teaching and learning methods through the website. Various sources have been considered such as the suitability of using online games with the subject being taught. Furthermore, YouTube provides several instances of successful tools for teaching and learning.

3.2 Observation

The second method is through indirect monitoring of the reaction of students in the other lecturer's class with the lecturer's permission. In order to obtain students' responses and emotions, indirect verbal monitoring is quite efficient. The educators should approach the students in such a way that they are open to sharing their learning concerns and difficulties. This monitoring is also carried out at random by various courses and professors.

3.3 Fieldwork

The implementation of interactive methods for Semester 01 of Diploma students, is the main pillar of the research methodology. There are a lot of free and interesting online games that are normally used in online education namely Quizziz, Kahoot! Quizlet, Quizz whizzer and others. The QR Code approach is applied as a new technology application combined with the Online Puzzle and finally, they have to create a creative emotion towards the interactive learning applied.

3.3.1 Quizwhizzer

Quiz whizzer is a game based that can boost student engagement with real-time, classroom quiz racing. Quiz Whizzer makes it easy to get students excited about formative assessments, and questions and can be used to revise topics for every lesson. The Quiz Whizzer game is divided into 2 options which are live race or homework based. Live race is the most intuitive format, where the first player to get to the finish (last space) wins.

The title of this interactive Quizwhizzer game is 'Visiting the Famous art Gallery and Museum in the World". For this research, researchers make two to three students in one group in a class. Before starting the game on the game board, the Lecture as a conductor must ensure that all students have good internet coverage. This Live race mode can accommodate up to 30 students in a single class session. While homework mode is more focused on the question and less focused on the race. The player's progress will appear through all questions, so in this homework mode, it's more suitable to revise topics for the final exam or assessment. This means when the player reaches the finish point, they might have questions remaining in which case they continue through them. The winner will be determined by how quickly and accurately each group answers all questions. The final task in the question of the game is for each group to create a creative emotion using a piece of paper provided by the instructor. Figure 01 below shows the quizwhizzer leader board used in this study.

Figure 1 Sample of the leader board of Quizwhizzer Online Game

3.3.2 QR Code

The Quiz Whizzer question requires students to find the hidden QR code throughout the classroom. Once they found the QR Code, they needed to connect pieces of artwork by Malaysian artists to the online puzzle. According to Collins English Dictionary Online in British English (2022), QR Code is a type of barcode that can be read both horizontally and vertically, allowing large amounts of information to be encoded in it. Figure 2 and 3 below, is the sample QR Code that has been used in this interactive online game innovation.
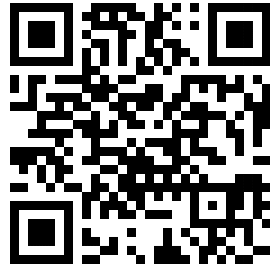
Figure 2 QR code for the Mask of Tutankhamun

Figure 3 QR code Online Puzzle direct link

A puzzle is a problem that can be solved using knowledge, inventiveness, or other talents. A puzzle solver must arrive at the proper answer, or answers, through reasoning or connecting together pieces in a logical manner.

This interactive learning will improve interpersonal skills and teamwork among students, as well as they will improve their basic theories of art, and finally enjoy the racing game through the question. The implementation of games makes students eager to learn and encourages them to study deeper in every topic. A suitable Online game and using strategy, students can become more active and participate in challenging complex and difficult tasks. (Ceker & Ozdamli, 2017, p.226) The theoretical framework has been specifically built to explain the research process in further detail, as seen below.
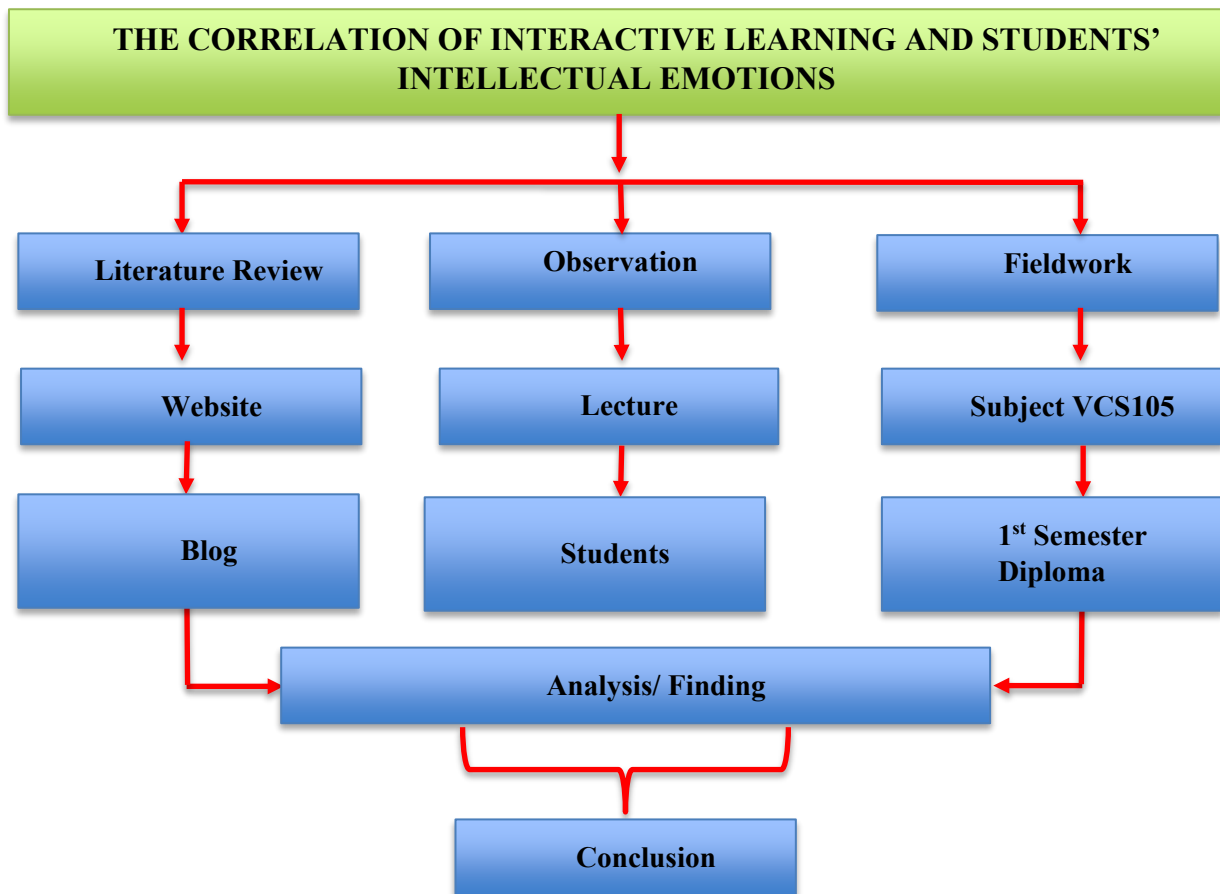

Diagram 1 Theoretical Framework of The Correlation Between Interactive Learning Methods and Student Intellectual Emotions

4. ANALYSIS AND DISCUSSION

4.1. Result from Quiz whizzer report

This survey is conducted at various times and in various classrooms to assess how well students understand what they are learning in class. This interactive learning approach can also build the spirit of competitiveness among groups while indirectly increasing their focus on the subjects being taught.

The result from the Quizwhizzer question shows that every group can answer the following question very well. The maximum number of incorrect answers is 5 questions out of 22 questions. Figure 04 below selected the maximum number of incorrect answers among 68 groups, while figure 05 shows the best result with the highest correct answer.

Based on the statistics of the result, it can be concluded that all teams successfully understand the topics of the principle and the elements of art and design as one of the challenging topics from the subject of art and design appreciation through this interactive learning.

Figure 4 Example of the highest incorrect answer
(Source: Author's, 2023)

Figure 5 Example of the best result with the highest correct answer.
(Source: Author's data collection, 2023)

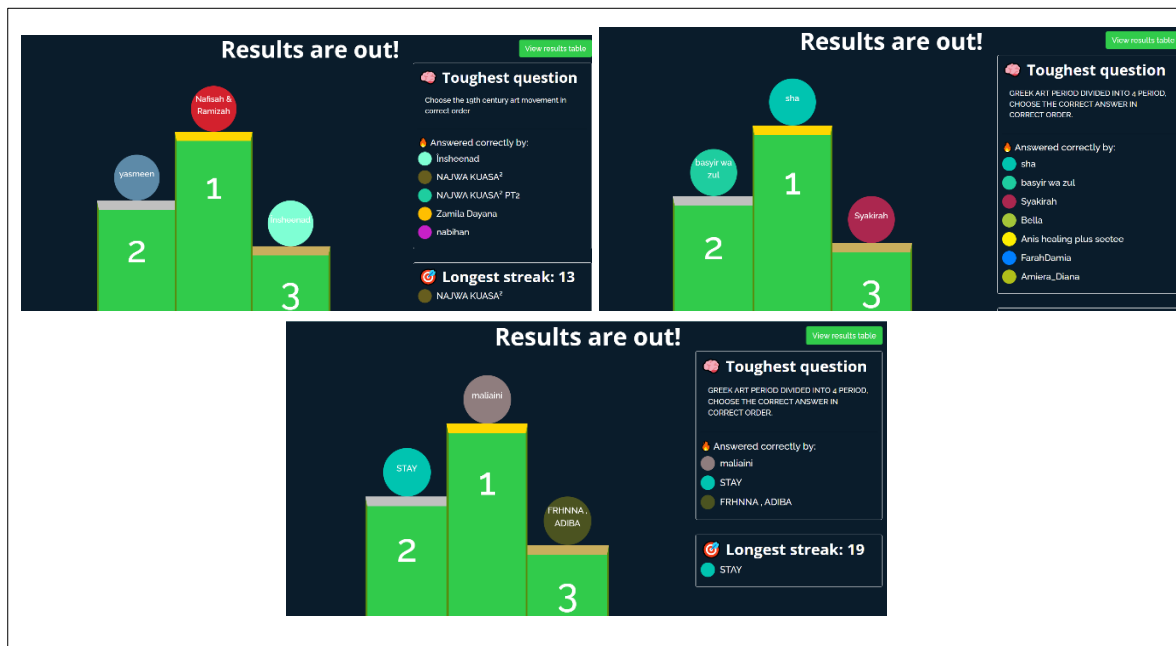## 4.2. Result of the race overall

Figure 6 Result of the Race Game

Figure 6 shows the sample of the result as a winner from three 3 groups. There are three criteria for the winner of this race: firstly, the highest score of the correct answer, secondly the fastest group who can find the QR code to solve the online puzzle and lastly successfully creating the creative emojis that express feelings towards interactive learning.

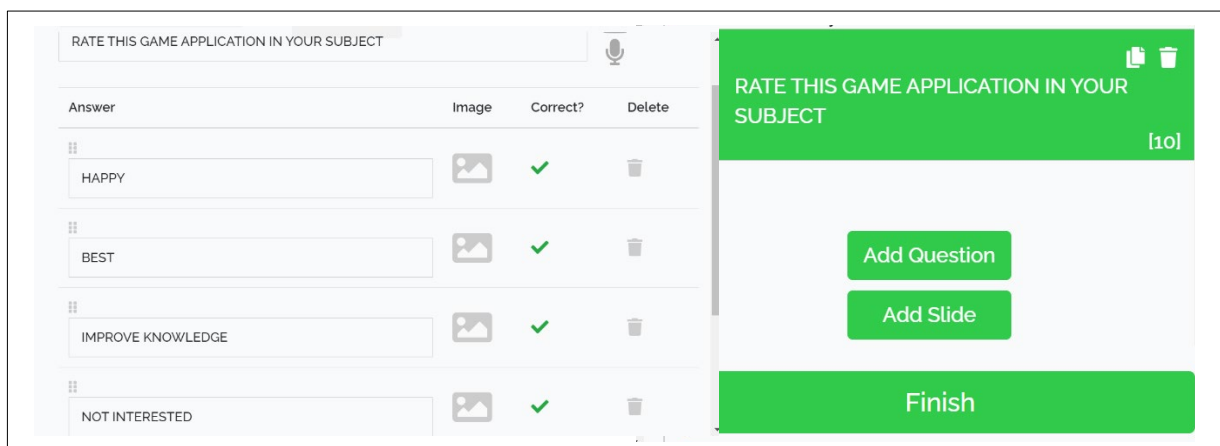## 4.3. Result of student evaluation on interactive learning.

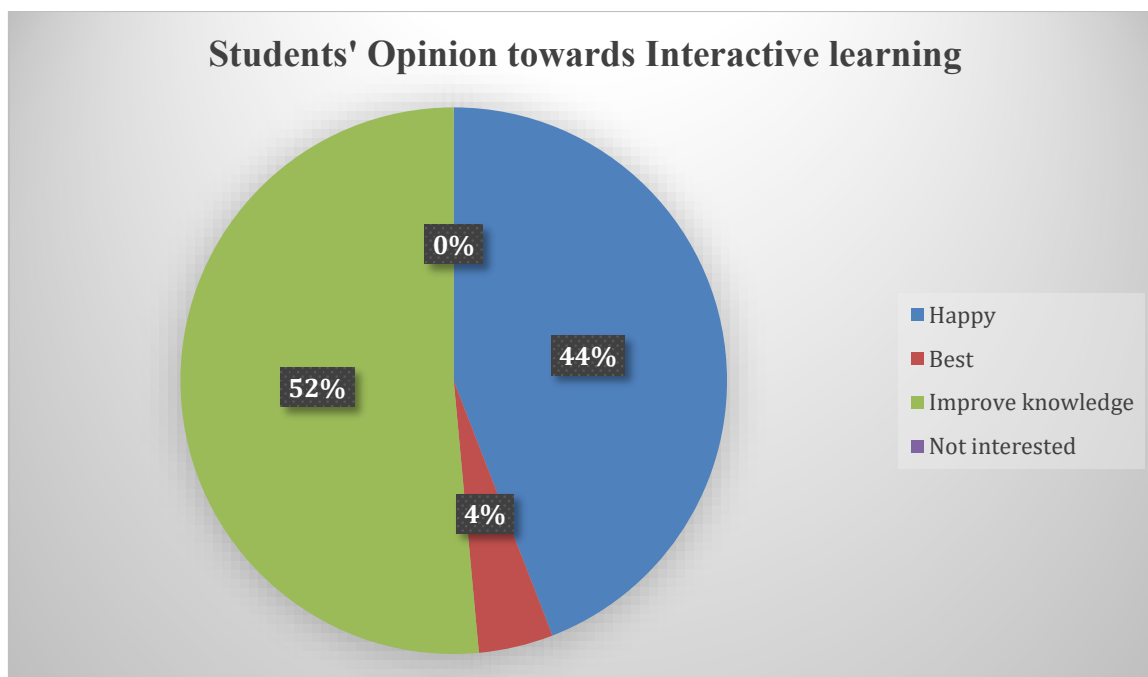**Figure 7** Sample of Evaluation Question in Quizzwhizzer

Figure 8 Students' Opinion Towards Interactive Learning

Figure 8 clearly shows the percentage of students' opinions towards interactive learning implementation in class. Based on the data collection, the students 'opinion towards interactive also can be concluded through Table 01 below.

Body of paper, indent first line to 0.54cm, single spacing. Insert 1 blank line between paragraphs. Body of paper, indent first line to 0.54cm, single spacing. Insert 1 blank line between paragraphs. Body of paper, indent first line to 0.54cm, single spacing. Insert 1 blank line between paragraphs. Body of paper, indent first line to 0.54cm, single spacing. Insert 1 blank line between paragraphs. Body of paper, indent first line to 0.54cm, single spacing. Insert 1 blank line between paragraphs.

Table 1 Data Collection from the result of Quizwhizzer

Indicator	The Number of Students	Percentage (%)
Happy	30	44
Best	3	4
Improve Knowledge	35	52
Not Interested	0	0
Total of Students	**137**	**100**

First, 52% of students believed that this strategy successfully improved their knowledge, followed by 44% who were happy while learning, 4% who indicated that this approach is the best, and none who were not interested in this method of learning.

5. Students' Creative Emotion Towards Interactive Learning.

According to Sigh R. (2022), There are numerous emojis that are classified. This is done to help users easily find the appropriate emoji. The categories of emojis such as people and smiley faces, animals and the environment, drinks and food, and activities.

In this study, students are enquired to create an emoji to describe their emotions and reactions to their level of mastery and understanding of the subject through using games as an interactive learning approach. Each emoji symbol represents a team in the games as can be seen in Figure 8 to Figure 11 below.
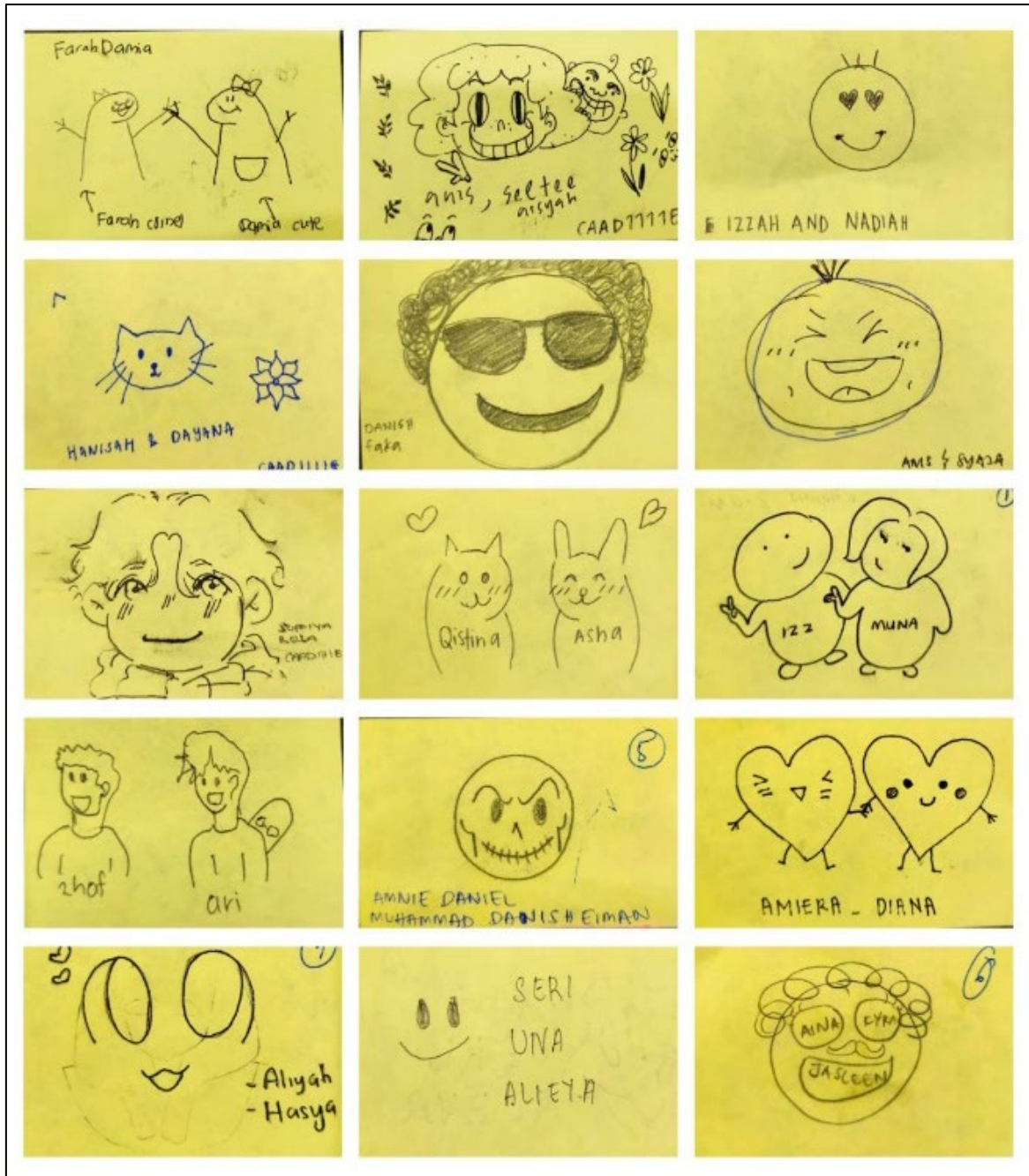
Figure 9 Students Creative Emotion 1
(Source: Author's collections)

Figure 10 Students Creative Emotion 2
(Source: Author's collections)

Figure 11 Students Creative Emotion 3
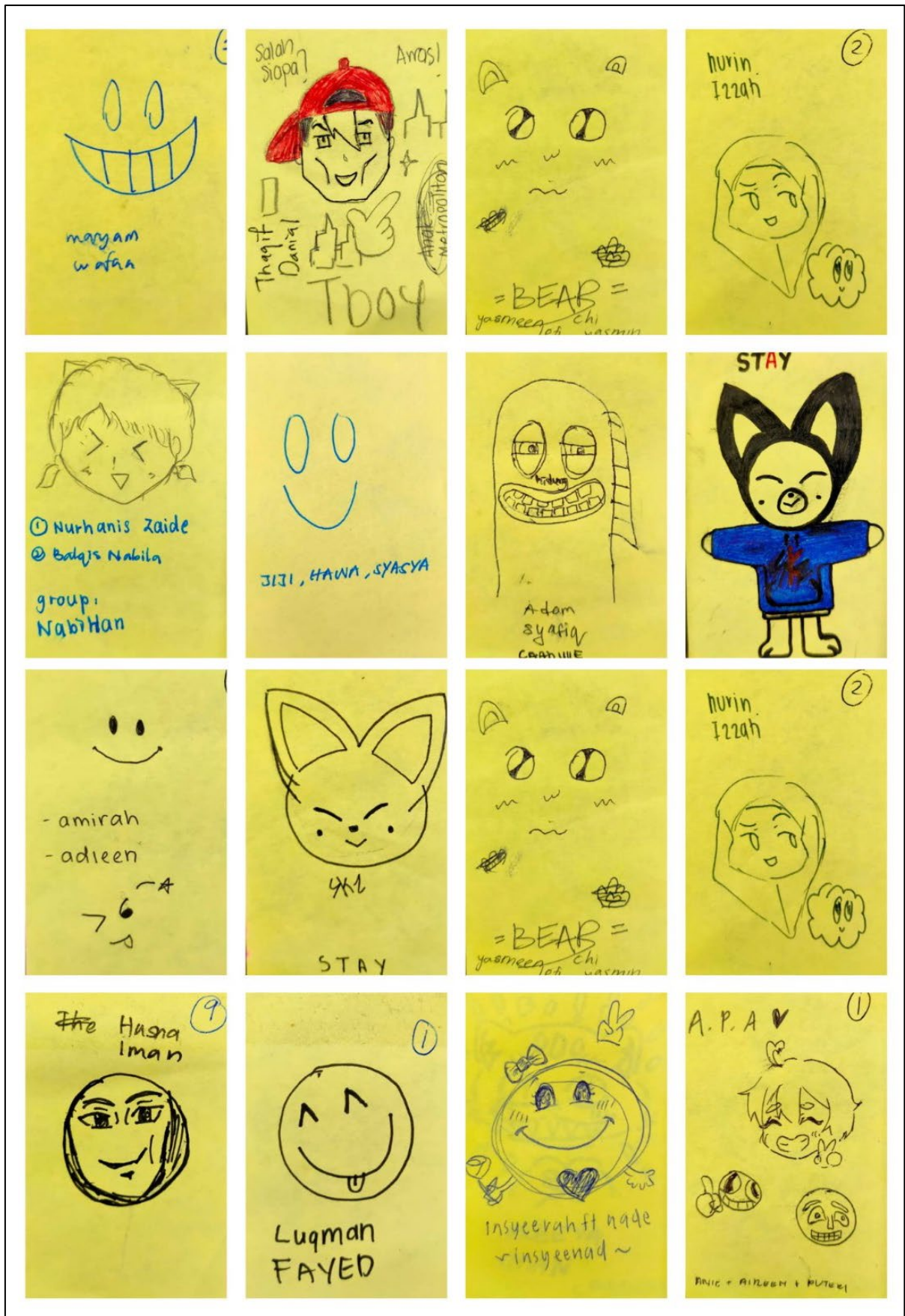(Source: Author's collections)

Figure 12 Students Creative Emotion 4
(Source: Author's collections)

6. CONCLUSION

In conclusion, this racing game as an interactive learning method was successfully applied, and the students responded positively. Based on the findings and responses from this study, gamification is a viable and successful online learning technique, particularly in art and design appreciation. Its mechanisms and methodology can be used in other theory subjects as a form of interactive teaching and learning to enhance students' attention span.

Furthermore, every educator must understand how to captivate students' hearts and emotions so that their enthusiasm for learning theory, philosophy, and history grows. This study also shows that students' emotions are the most important component in the effectiveness of teaching and learning. Students who are emotionally disturbed are unable to concentrate on their studies. Furthermore, a student's performance is examined not just in terms of academic achievement, but also in all aspects of life, such as the ability to effectively communicate, cooperate, act, and make wise decisions.

This study may also have a beneficial and significant impact on learning approaches for overcoming the challenges of depression among students. As a result, the implementation of interactive learning methods can influence students' psychology and emotions as motivation for academic excellence.

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AUTHOR CONTRIBUTIONS

All authors contributed equally on this research.

CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest in accordance with the research, authorship, or publication of this work.

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Saya yang menjalankan amanah,

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