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| RESEARCH ARTICLE

## The Effectiveness of Wordwall in Enhancing Students' Engagement and Motivation in Literature Classes

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| ABSTRACT

In order to enhance students' engagement and motivation, the integration of technology into instructional environments is becoming increasingly fundamental. In this context, Wordwall is utilized for English Letters students in Universitas Sanata Dharma. This study investigates the effectiveness of Wordwall—an online tool applying gamification principles in non-game contexts—to enhance English Letters students' learning engagement and motivation in literature classes. Wordwall is chosen among other platforms since it is free to use and students do not need to login to the platform. Therefore, it is deemed to be practical. This study uses quasi experimental post-test design. The population of this study is the students of Introduction to Literature and Culture of English-Speaking Nation of English Literature Class batch 2022. Both groups took a pre-test and post-test and the results were compared to see the variance in the results. Each group received one lesson per week for four weeks as part of the treatments. Lastly, the data were analysed using independent sample t-test with SPSS version 25. The findings indicated that integrating Wordwall into Literature classes had a notable impact in motivating students to actively engage in the learning environment. Employing gamification quizzes in literature classes emerged as an innovative agent to engage students' interest in reading and interpreting literature works. In addition, the enjoyable and friendly competitive nature in Wordwall also facilitated the students to understand the literature texts better. Importantly, the lecturer may also monitor the students' progress from the results of the quizzes presented in ranks, leaderboards, or statistics.

| KEYWORDS

Wordwall, students' engagement, literature, technology.

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### 1. Introduction

Teaching can be frustrating when you ask a question to your students then they only give you stares and give no respond to your question. In literature classes, the problems regarding students' engagement and motivation mostly occur when we have a discussion about certain topic or works. Sometimes, questions from the lecturer can be intimidating for many students. There are times when no students know the answer to the questions but other times students may know the answer and still keep silent. Sometimes they are not in the mood to speak or too shy to produce the answer to the questions. Maybe they are too afraid to say the truth that they have not read the literary works or do not understand the context presented by the author. Zainuddin et al. (2019) find that in university levels, students tend to lost their motivation and engagement in the classroom. Traditional teaching method is claimed to provide no solution to the lack of students' engagement and motivation in the classroom. Thus, we argue that the key to promote students' engagement is by using technology and gamification as a way to boost students' confidence and to improve their engagement and potentials.

Based on the issue mentioned above, this research aims to show that Wordwall can be used as an effective strategy to increase students' engagement in a fun activity and build their confidence to get involved in the class activities. Specifically, we want to check that Wordwall can motivate students in the 3<sup>rd</sup> semester to learn literature and "provide teachers with an effective learning method based on game design techniques to teach literature" (Menchaca, Moya, & Bastida, 2019). It is in the same vein with Kearsley and Schneiderman (1998) who argue that "engagement theory is applied to develop an intrinsic motivation in students' mind to be better learners". Thus, this research wants to scrutinize whether Wordwall, as the gamification platform, works positively to increase students' behavioural, emotional, cognitive and agentic engagement, motivate them in joining literature classes, and enhance their learning performance through friendly competition.

In literature classes, the activities are not only created to help students to understand the materials or literary texts but also to train and sharpen their critical thinking, empathy, and develop their potentials. However, some activities in literature classes are conducted in teacher-centred method while tasks in literature class, like worksheets to check students' comprehension and group and class discussion somehow are time-consuming in big classes. Lecturers need to develop and use creative teaching method to engage students more in the teaching and learning activities. To help students get better understanding in literature classes, lecturers may provide stimuli that can encourage students to act with curiosity, motivation, and involvement in each teaching and learning activity by creating unique learning experiences. Thus, in order to actively participate in the learning processes, students require effective and interactive experiences.

In order to increase students' engagement and motivation to learn, innovative and creative technology needs to be used in instructional environments more. Technology is seen as an effective tool that can make education more meaningful and engaging for teachers and students. Through the use of gamification principles, teaching and learning may flip the boredom into a more collaborative and enjoyable process. The purpose of implementing the gamification concept in literature class is to expand students' engagement and motivation. The main focus of gamification is "to direct user behaviour into the desired direction" (Gatautis et al., 2016). Applying game to a lesson may increase user's engagement yet its application should be in the non-game context (Deterding et al., 2011, Calderón et al., 2017, Mauroner, 2019). As a result, it may give positive impact on the achievement and behaviours of the students (Yildirim, 2017). In line with Menchaca, Moya, and Bastida (2019), the use of gamified learning approaches gives students and lecturers the chance to express their creativity and build strong impersonal ties, which make learning more effective, efficient, and enjoyable.

Any software or tool that applies game mechanics to non-game environments in order to enhance engagement and overall success is known as a gamification platform (Darejeh & Salim, 2016). The term gamification was first coined in 2002 and has gained popularity recently (Gatautis et al., 2016; Hamari et al., 2014; Cheung & Ng, 2021). Gamification has been used widely in various fields such as healthcare, education, marketing, professional works, and many more (Calderón et al., 2017; Al-Dosakee & Ozdamli, 2021). Since its proper implementation can increase intrinsic motivation and engagement (Al-Dosakee & Ozdamli, 2021), it can be a powerful tool for teachers at all levels and fields within the educational system. The advantage of using gamification is that it can create fun and engaging activities through music, graphic, and rewards. Hence, using gamification in teaching and learning activities are suggested since it is effective to improve students' motivation and engagement. In addition, Zainuddin et al. (2019) underline that the usage of gamification in the classroom has created friendly competition and helped students to improve their learning performances.

## **2. Literature Review**

The use of gamification in non-game context has invited many scholar discussions. Zainuddin et al. (2019) use three gamification platforms such as Socrative, Quizizz, and iSpring Learn LMS to determine the strengths and weaknesses of these gamification platforms based on their specific features and evaluation characteristics. Al-Dosakee and Ozdamli (2021) identify the existing trends and initiatives utilizing gamification in their environments. They find that gamification can be employed as a useful tool for teaching and learning languages and can increase learners' motivation and turn learning into an enjoyable process. Menchaca, Moya, and Bastida (2019) state that gamification can be used as an alternative method to motivate students in Spanish literature class. It is stated that the gamification platform and its creative parts are essential to develop students' intrinsic motivation. Rodrigo Smiderle et al. (2020) claim that gamification affects participants differently depending on their characteristics. We find that gamification activities are more beneficial to introvert students rather than extrovert students. Students with low openness and introverts show more engagement and a significant improvement rather than extrovert students. However, in the field of teaching Literature, no current works or research can be found using gamification to develop and enhance students' learning engagement and motivation in literature classes. As a result, this investigation tries to fulfil the niche that is still possible to be explored.

## **3. Methodology**

This section was divided into five subsections namely: 1) Participant, 2) Setting, 3) Wordwall, 4) Procedures, and 5) Data Analysis. In the first section, the researchers gave general data related to the participants of this research. The second section highlighted

detailed information about the setting and how the study was conducted. The third part described the gamification used in this study. In the next section, the researchers provided the procedures and steps in conducting the present study. In the last step, the researchers presented the research data that was collected after implementing Wordwall until the data was analysed by using independent sample t-test with SPSS version 25.

### 3.1 Participant

The population of this study was students enrolled in the odd Semester of the 2022 academic year from Introduction to Literature Class and Culture of English-Speaking Nation of English Literature Classes. Around 60 students from English Letters Department of Universitas Sanata Dharma Yogyakarta, Indonesia participated in this research. The students were in their 3<sup>rd</sup> semester and aged between the ages of 19 to 21 years. Both groups (Introduction to English Literature and Culture of English-Speaking Nation classes) took a pre-test and post-test and the results were compared to see the variance in the results. As part of the treatment, each group of students got one lesson per week for four weeks, after they completed the pre-test questionnaire. In the last lesson, students filled out the questionnaire to measure the level of their learning engagement and motivation in literature classes. This is in accordance with Creswell and Creswell (2017), who stated that a non-randomization design is one of the features of quasi-experimental research targeted at preserving a natural setting.

### 3.2 Setting

Both groups of participants received both traditional and Wordwall activities. Before the participants had Wordwall activities, we gave them a traditional activity. During the treatments, we taught both groups with different topics and literary works, which each meeting lasted for 150 minutes. The gamification platform employed in this research is Wordwall (<https://wordwall.net>).

**Table 1. Gamified Learning Activities**

No	Activities	Duration
1	Review on last meeting's topic	15 minutes
2	Short lecture	30 minutes
3	Class discussion and group presentation	60 minutes
4	Questions and answers, Wordwall gamified activities*	30 minutes
5	Feedback and reflection	15 minutes
	<b>Total</b>	<b>150 minutes</b>

### 3.3 Wordwall

Wordwall was selected above other platforms since it was easy to use, free to use, and did not need students to create an account. Moreover, the lecturers may choose various themes and templates that are suitable with the topics and discussion they have in their classes. Wordwall also allows lecturers to create interactive games and printed materials for their students. They simply need to enter the content they want in the desired template and it will automate the rest. Using Wordwall is practical since it can be played in any device like computer, tabs, or mobile phone. Students can play the game individually or lecturers can lead the game in front of the class while students will take turns to answer the questions. Essentially, Wordwall may help lecturers to monitor students' achievements and progress, give direct feedback to the students, and use it as a formative assessment tool.

### 3.4 Procedures

This study uses quasi experimental post-test design. The quantitative method employed in this research is survey methods. We distributed the questionnaires via *Google Forms* to the participants containing the questions to identify students' engagement and learning motivation in literature class. The closed-ended questions were taken from Reeve and Tseng (2011) and structured in a 5-point Likert Scale. The questionnaire ranged from **Strongly Disagree** to **Strongly Agree** and was categorized into four sections namely **Emotional, Behavioural, Cognitive, and Agentic**. Before the implementation of Wordwall gamified activities, both groups took a pre-test and a post-test that was given in the end of the treatment. Later, the results were compared to see the number of the variance in the results.

### 3.5 Data Analysis

The research activities are included preparation, treatments, and the implementation of Wordwall gamified activities. Firstly, we prepared the materials, made Wordwall gamified activities, and created the questionnaire. Next, students took the pre-test survey and were introduced to Wordwall and the concept of gamification. After that, we conducted the lessons for four weeks and gave one Wordwall activity in each meeting. In each meeting, students were given a topic or a literary work that was different with the following meeting. The exercise or quiz made in Wordwall were made around 15-20 questions and formulated to measure students' comprehension of the topics they had been taught. Moreover, it was conducted to check students' learning engagement

and motivation in literature class. In the fourth week, the participants took the post-test survey for 10-15 minutes through *Google Forms*. After the data from respondents were collected, we used them to find out the answers from the research problems. Lastly, the data were analysed using independent sample t-test with SPSS version 25.

#### **4. Results and Discussion**

Result and Discussion are two components that make up this section. The result of the questionnaire that the students in Literature classes completed after taking a post-test are presented in the first section. The data analysis and the interpretation, study implications and contributions, as well as study limitation and recommendation for future researchers are covered in the second part of this section.

##### **4.1 Result**

The aim of this study is to scrutinise the use of Wordwall to enhance students' learning engagement and motivation in literature classes that was conducted in English Letters Department, Sanata Dharma University. The results found from the pre-test and post-test to achieve this aim were shown in these following titles.

##### **4.1.1 Data Description**

The sample of this research was 79 students who had taken the pre-test and post-test. The result of the data description analysis of the sample is presented in **Table 2**.

**Table 2. Data Description Research**

<b>Variable</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>St. Deviation</b>
<b>Pre-test</b>	46	120	89,68	15,809
<b>Post-test</b>	63	120	95,04	12,743

**Table 2** shows that the mean of the pre-test is 89,68 while the mean of the post-test is 95,04. The difference between them is 5,36 that shows a significant average difference between those two variables.

##### **4.1.2 Data Categorization**

The next data analysis was done to find the categorization of two data variable. The result is presented in the following table.

**Table 3. Data Categorization Research**

<b>Variable</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>Pre-test</b>	17,72%	65,82%	16,46%
<b>Post-test</b>	17,72%	68,35%	13,93%

**Table 3** illustrates that in general the result of students' pre-test and post-test is in the Medium category. On the other hand, the number of the students who are in the High category for both pre-test and post-test is 17,72%. Furthermore, students that are in Low category for post-test variable are less than pre-test variable. This shows an increase in the number of students after receiving treatment with the use of Wordwall in Literature classes.

##### **4.1.3 Prerequisite Test Analysis**

This study examines whether there is an impact of using Wordwall in Literature classes by employing Paired Sample t-Test. Before conducted the test, prerequisite analysis of normality and homogeneity of data must be fulfilled first.

##### **4.1.3.1 Normality Test**

Normality test is the first things that must be fulfilled before conducting a test for Paired Sample t-Test. The type of Normality Test used was called Shapiro Wilk test assisted SPSS software. These are the hypotheses of the test.

- $H_0$  : Data is normally distributed
- $H_1$  : Data is not normally distributed

If the Sig. level > Sig. 0,05 then  $H_0$  is accepted, which means that the data group come from a normal distribution, whereas if the value of Sig. < Sig. 0,05 then  $H_0$  is rejected, which means the data group do not come from the normal distribution. The result of the test is presented in **Table 4**.

**Table 4. Normality Test**

Data	Sig.
Pre-test	0,324
Post-test	0,592

From **Table 4**, we can find that the data of pre-test have Sig. 0,324 > Sig. 0,05 which means  $H_0$  is accepted, that the pre-test data is normally distributed. However, the post-test data has Sig. value 0,592 > Sig. 0,05 which means  $H_0$  is accepted, that the post-test data is normally distributed. Thus, it is known that both data have fulfilled the first prerequisite assumption, that they are normally distributed. Since both groups have met the first requirement, then they are proceeded to the second requirements that the data must be homogenous.

#### 4.1.3.2 Homogeneity Test

The homogeneity test is the second requirement that must be fulfilled before conducting the Paired Sample t-Test. The homogeneity test used was the Levene Statistic assisted by SPSS software with the following hypotheses.

- $H_0$  : Data group comes from the populations that have the same variants (homogenous)  
 $H_1$  : Data group does not come from the populations that have the same variants (not homogeneous)

If the value of Sig. > Sig. 0,05 then  $H_0$  is accepted, which means that the data group comes from the populations that have the same variants (homogenous). However, if the value of Sig. < Sig. 0,05 then  $H_0$  is rejected, which means the data group does not come from the populations that have the same variants (not homogeneous). Based on the result of Levene Statistic homogeneity test, Sig. 0,139 > Sig. 0,05. It shows that  $H_0$  from the data group which come from the same variants (homogeneous) is accepted. In this case, a Paired Sample t-Test can be performed because both analytical prerequisites have been met.

#### 4.1.4 Hypothesis Test

##### 4.1.4.1 Paired Sample T-Test

The Paired Sample T-Test was used to compare the difference between the two means of the two paired samples. These two paired samples came from the same subject but each variable was taken in different situations and circumstances. In this research, the sample was given both pre-test and post-test. The pre-test was given in the beginning of the study while the post-test was given after the students were given a treatment using Wordwall activity. This is the hypothesis in this test.

- $H_0$  : There is no significant difference between pre-test and post-test  
 $H_1$  : There is significant difference between pre-test and post-test

The result of the SPSS-assisted Paired Sample T-Test is presented in **Table 5**.

**Table 5. The Result of Paired Sample T-Test**

	Lower	Upper	T	Sig. (2-tailed)
Pre-test – Post-Test	-7,881	-2,828	4,119	0,000

**Table 5** illustrates that Sig. 0,000 < Sig. 0,05. It means that  $H_0$  is rejected because there is a significant difference between pre-test and post-test. Therefore, it can be concluded that the treatment using Wordwall activity has a higher average than before the treatment. It is also shown from the difference between pre-test and post-test of 5,36. So, the two variables have a significant difference in average and the use of Wordwall activity has a significant effect in Literature classes.

#### 4.2 Discussion

The findings of this study unveils that the use of Wordwall in Literature classes shows positive and significant impact to increase students' engagement. Wordwall activities involved competitions, ranks and leaderboards, statistics and progresses, and score may motivate students to be involved during teaching and learning activities. The results also illustrate that students are less motivated before lecturer applied Wordwall in the classroom and showed more participation during the used of Wordwall activities.

This method can encourage students who are shy or reluctant to have a direct interaction with lecturer or other students since they can work independently during the treatment. The present research also underlines that the quiz competition after lectures and group presentation can motivate them to have a friendly competition with their peers that lead to the increase of scores.

It is in the same vein with previous research conducted by Foncha and Abongdia (2022), Zainuddin et al. (2019), and Menchaca et al (2019). Foncha and Abongdia (2022) shows the importance of the use of technology by pre-service teachers in teaching poetry. This study highlights the problems that are experienced by teachers and students during Covid-19 pandemic so that teachers need to find other teaching strategies since they have to cope with students' various learning needs. Foncha and Abongdia (2022) state that by conducting a new way of thinking in teaching and learning activities, the interaction between learners can be promoted and learners' participation during lessons can be developed. Zainuddin et al. (2019) argue that gamified e-quiz exercises showed positive result on students' engagement since they provide game principles such as points, badges, competitions, certificates, leaderboards, and even memes. However, the quantitative result of this study did not find any significant difference in students' performance between gamified online quizzes and paper-based quizzes (p. 21). The analysis on the use of gamified method in literature class was also conducted by Menchaca et al (2019). The study finds that both students and teachers in Spanish literature class were highly motivated. Students were active, engaged, and involved in the learning environment. On the other hand, the final score of the students were better than the score of the students in the same subject last year.

Gamification is becoming more popular in education sector due to its beneficial impacts on student learning, whether in online or traditional classroom setting. Zainuddin et al. (2019) claim that recently gamification is not only popular but it is also a trend in organization (p. 24). Sungjin Park and Sangkyun Kim (2021) mention that, during Covid-19 pandemic, gamified online learning programs serve positive impact on students' motivation in developing their selves and improving their grades. In line with the present study, it implies that the use of technology in literature class that can also improve students' self-innovation, motivation, and self-esteem. Features offered in the gamification such as scores, ranks, rewards, and leaderboards present immediate feedback to students are some aspects that create a fun and friendly competition. Huang, Hew, and Lo (2018) claim that "the quality-based badges, such as movie badges, coffee badges, tour package, and levels, helped motivate students to provide high-quality submissions".

The use of Wordwall as a formative assessment tool allows the lecturer to monitor the students' learning processes and individual achievement. Huang, Hew, and Lo (2018), moreover, state that gamification may promote students' cognitive engagement from weekly quizzes that were conducted using gamification. The future research discovers that Wordwall has encouraged students to engage in the classroom activities, gave confidence in analysing literature works, and enabled them to accomplish tasks. This gaming platform can be employed by the lecturer as an alternative formative assessment through interactive quizzes conducted before or after the class. Additionally, after Wordwall activity, it is possible to monitor students' progress and lecturer can provide feedback on the assessments. Wordwall has 33 interactive templates include the classic one and arcade modes that can be used or easily switched in a minute. Essentially, this platform is easy to be applied in any subjects and the students can work collaboratively to solve the problems.

#### ***4.2.1 Implications and Contribution***

The outcomes of this study provide practical implication for lecturers, students, and stakeholders. First, this research can be beneficial for lecturers who teach literature classes and want to find the best method, activities, and strategy to enhance students' learning engagement, motivation, and even performance. In this way, lecturers may switch their teaching methods from traditional teacher-centred approach into student-centred approach. Thus, Lecturers may employ Wordwall in order to build up their teaching strategies and enhance the teaching processes as well as create interactive activities such as gamification quizzes in various themes and templates. Lecturers can also make another custom activity for their classrooms for example word games, match ups, gameshow quiz, random wheels, etc. Those activities can be used to measure students' understanding and comprehension of the literary works they have learned. In this study, students receive one Wordwall lesson per week for four weeks for part of the treatments. Lecturers can also use this application as weekly gamification exercises after a lecture session, a class discussion, pair work, or even a small test. Moreover, student's progress can be followed since Wordwall provides scales and graphics after students taken the gamification exercise. Thus, lecturers may use the result as their consideration to move on to the new topic or not while for the students, they can check on their progress during the lesson. Importantly, Wordwall is a free online platform and students do not need to login to the platform. Therefore, this platform is deemed to be practical.

Second, this research may help students to learn how to readapt in participating during the post-Covid-19 pandemic classes. Since students are literate in the use of Information and Communication Technology (ICT), the use of technology during a lesson is a walk in the park for students. The use of Wordwall helps students to understand the material and the literary texts in a fun and entertaining way. Furthermore, students can get the opportunity to use gamification application and get the benefit to enhance their learning engagement, critical thinking, and expand their horizon. Importantly, students may improve their knowledge and

maintain the spirit of collaboration and belonging to the class. In line with Göksün and Gürsoy (2019) and Haleem et al. (2022), the present study shows that Wordwall has improved students' participation and expanded their knowledge in literature classes.

Third, this study is beneficial for the educational institutions and stakeholder to develop gamified learning and principles and use them as a model of contemporary teaching and learning method. Moreover, any educational institutions in various levels may implement this method in their teaching and learning activities, especially in the literature classes. In other words, the result of this research can encourage the transformation of traditional learning method and assessment into an enjoyable, contemporary, and innovative learning environment. Since the school that was temporarily closed will change the way the students cooperate during the lectures, this research may encourage students give contribution in each learning activity.

#### 4.2.2 Limitation and Recommendation

Wordwall is effective for raising students' interest in learning literature works and may help lecturers to prepare engaging activities. Thus, the traditional teaching method that has the lecturers as the centre can be replaced with a student-centred approach. Students are literate in the usage of ICT thus they will find no difficulties in using Wordwall. Moreover, Wordwall is effortless to use for users do not need to sign up to join the activity and they can open it anywhere in any gadget. In this case, Wordwall has assisted the students in understanding the content and literary texts in a fascinating and enjoyable environment. As a result, students have an easier time to learn the material and enjoy the classes more. As a final point, Wordwall is relevant and applicable in any educational institution, level, and field.

### 5. Conclusion

A treatment using Wordwall activity is an essential strategy to motivate students in Literature classes. The use of technology and gamification may increase the intrinsic motivation of the students and improve their confidence, engagements, and potentials. Furthermore, Wordwall allows lecturers to choose various themes and templates that are suitable with the topics and create interactive games for their students. Particularly, as a gamified quiz, Wordwall has encouraged the students to improve their performance in literature classes and helped them in both individual and collaborative activities. This research has shown that the employment of Wordwall in literature class can be a powerful tool to create, develop, and maintain a lively and engaging class activity. Thus, we recommend that another future research can be performed to integrate Wordwall with another gamified quiz platform to fulfil the students' needs in the post-pandemic era. Additionally, we strongly recommend the future researchers to find another suitable gamified platform that can be used in literature classes.

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**Appendix 1.** Pre-Test Questionnaire of Students' Engagement in Literature Classes

*Instruction:*

Listed below are statements about.

Indicate your Agreement or Disagreement by choosing the appropriate answer:

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), or Strongly Agree (5).

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>Emotional Engagement</b>						
1.	When I worked on "Forum Discussion", I felt interested.	1	2	3	4	5
2.	When I answered questions on "Forum Discussion", I felt curious about the correct answers and my progress scores.	1	2	3	4	5
3.	I thought that this class was fun because of the "Forum Discussion" assessments.	1	2	3	4	5
4.	I enjoyed this class because of the "Forum Discussion".	1	2	3	4	5
5.	I felt enthusiastic to participate in a "Forum Discussion" activity and paper based quizzes.	1	2	3	4	5
6.	I enjoyed learning new things in this class	1	2	3	4	5
<b>Behavioural Engagement</b>						
7.	I listened carefully during feedback sessions.	1	2	3	4	5
8.	I actively participated during feedback sessions.	1	2	3	4	5
9.	I paid attention to other students' questions, comments, and feedback.	1	2	3	4	5
10.	I worked hard to answer quiz questions on the "Forum Discussion".	1	2	3	4	5
11.	I was able to collaborate with friends during discussion and feedback sessions.	1	2	3	4	5
12.	I was able to answer quiz questions independently.	1	2	3	4	5
13.	I tried to be active in asking and answering question during the learning process.	1	2	3	4	5
<b>Cognitive Engagement</b>						

14.	I was able to track my achievement progress after the "Forum Discussion" activity.	1	2	3	4	5
15.	"Forum Discussion" were a form of friendly competition.	1	2	3	4	5
16.	I was able to remember the knowledge I gained from the gamified quiz work.	1	2	3	4	5
17.	This class helped me to improve my critical thinking skills through various types of quiz questions.	1	2	3	4	5
18.	We were able to solve any problem related to the quiz questions together in a group during the evaluation and discussion session.	1	2	3	4	5
<b>Agentic Engagement</b>						
19.	I let my teacher know what I needed and wanted in order to improve my learning progress.	1	2	3	4	5
20.	I asked questions to make the class more active and lively.	1	2	3	4	5
21.	I reported to the teacher what I liked and disliked from the class activity.	1	2	3	4	5
22.	I proposed suggestions about how to make the class better and not so boring.	1	2	3	4	5
23.	During class, I expressed my preferences and opinions.	1	2	3	4	5
24.	I let my teacher know what I was interested in.	1	2	3	4	5

\*) This questionnaire was adapted from Reeve and Tseng (2011)

## Appendix 2. Post-Test Questionnaire of Students' Engagement in Literature Classes

*Instruction:*

Listed below are statements about.

Indicate your Agreement or Disagreement by choosing the appropriate answer:

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), or Strongly Agree (5).

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>Emotional Engagement</b>						
1.	When I worked on Wordwall quizzes, I felt interested.	1	2	3	4	5
2.	When I answered questions on Wordwall quizzes, I felt curious about the correct answers and my progress scores.	1	2	3	4	5
3.	I thought that this class was fun because of the Wordwall quiz assessments.	1	2	3	4	5
4.	I enjoyed this class because of the Wordwall quizzes.	1	2	3	4	5
5.	I felt enthusiastic to participate in a Wordwall learning activity and e-quizzes.	1	2	3	4	5
6.	I enjoyed learning new things in this class	1	2	3	4	5
<b>Behavioural Engagement</b>						
7.	I listened carefully during feedback sessions.	1	2	3	4	5
8.	I actively participated during feedback sessions.	1	2	3	4	5
9.	I paid attention to other students' questions, comments, and feedback.	1	2	3	4	5
10.	I worked hard to answer quiz questions on the Wordwall application.	1	2	3	4	5

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11.	I was able to collaborate with friends during discussion and feedback sessions.	1	2	3	4	5
12.	I was able to answer quiz questions independently.	1	2	3	4	5
13.	I tried to be active in asking and answering question during the learning process.	1	2	3	4	5
<b>Cognitive Engagement</b>						
14.	I was able to track my achievement progress after the Wordwall quiz activity.	1	2	3	4	5
15.	Wordwall e-quizzes were a form of friendly competition.	1	2	3	4	5
16.	I was able to remember the knowledge I gained from the Wordwall quiz work.	1	2	3	4	5
17.	This class helped me to improve my critical thinking skills through various types of quiz questions.	1	2	3	4	5
18.	We were able to solve any problem related to the quiz questions together in a group during the evaluation and discussion session.	1	2	3	4	5
<b>Agentic Engagement</b>						
19.	I let my teacher know what I needed and wanted in order to improve my learning progress.	1	2	3	4	5
20.	I asked questions to make the class more active and lively.	1	2	3	4	5
21.	I reported to the teacher what I liked and disliked from the class activity.	1	2	3	4	5
22.	I proposed suggestions about how to make the class better and not so boring.	1	2	3	4	5
23.	During class, I expressed my preferences and opinions.	1	2	3	4	5
24.	I let my teacher know what I was interested in.	1	2	3	4	5

\*) This questionnaire was adapted from Reeve and Tseng (2011)