

Improving Learning Outcomes and Student Participation Through Technology-Based Interactive Media in English Learning in Class 7H SMPN 6 Mataram

Hardian Kurniawati^{1*}, Lalu Thohir², & Ni Ketut Ayu Windrawati³

¹Teacher Professional Education Program, University of Mataram, Indonesia

²English Department, University of Mataram, Indonesia

³SMPN 6 Mataram, Indonesia

Corresponding Author: Hardian Kurniawati

E-mail: hardiankurniawati@gmail.com

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Abstract: This class action research aims to increase student participation and English learning outcomes by utilizing technology-based interactive media in class 7H at SMPN 6 Mataram. The subjects of the study were 42 students in class 7H. The problems identified are the low involvement of students in the learning process, as seen from the passive attitude, lack of initiative to ask and answer, and lack of interaction in group discussions. The research was carried out in two cycles by applying interactive media, *Wordwall*, and *Games to Learn English*. The results showed a significant increase in student participation and learning outcomes: they became more active in answering questions, daring to express their opinions, and showing enthusiasm in participating in learning activities, resulting in better learning outcomes. Thus, the use of technology-based interactive media has proven to be effective in creating an active, fun, and collaborative learning atmosphere and is able to improve student learning outcomes.

Keywords: Student participation, interactive media, learning technology, English, junior high school

Introduction

Active learner engagement is an essential indicator of successful English language learning. Active students tend to understand the material better and possess higher learning motivation (Uno, 2016). However, in reality, in the 7H class of SMPN 6 Mataram, most of the students are passive. They rarely ask questions and tend to wait for the teacher's instructions.

During the PPL 1 teaching practicum, learning activities are still dominated by lecturing methods and written exercises. According to Hamalik (2019), teacher-centered learning causes students to lose the opportunity to construct knowledge independently. Therefore, innovation in learning is needed by utilizing media that is interesting and relevant to students' lives.

Arsyad (2020) emphasized that learning media has a strategic role in effectively distributing learning messages. With the support of technology, the media can transform the classroom into a more interactive space. This is in line with the *theory of Technology-Enhanced Active Learning* by Beichner (2020), which highlights the importance of integrating technology to promote collaboration and exploratory learning.

Furthermore, the *Constructivist Learning* approach of Vygotsky (1978) explains that knowledge will be meaningful if students build their own understanding through social experiences and interactions. Therefore, the use of interactive media such as *Wordwall* and *Games to Learn English* in PPL 2 is expected to create a meaningful, collaborative, and fun learning experience.

According to Mayer (2017), the use of multimedia in learning can improve conceptual understanding because it involves visual and auditory channels simultaneously. This theory supports the idea that digital media, such as interactive quizzes, can strengthen students' memory and engagement.

By utilizing the theories of Mayer (2017) and Munir (2017), the use of digital media helps optimize cognitive channels and improve learning retention. Students seem to understand the material faster because learning involves interesting audio-visual elements.

Munir (2017) added that digital learning expands students' access to learning resources and increases learning flexibility. This supports the needs of 21st-century learning that emphasizes digital literacy and global collaboration.

According to Slavin (2018) and Johnson & Johnson (2019) affirm that cooperative learning helps improve learning outcomes through social interaction. When students work in groups to complete an educational quiz or game, they learn to help each other and motivate each other.

Students' motivation to learn often arises because of a sense of pleasure and interest in it, so according to Rosyada (2020), teachers in the digital era must be facilitators who are able to utilize technology to create innovative learning. This view is strengthened by Suprijono (2016), who emphasizes the importance of *PAIKEM* (Active, Innovative, Creative, Effective, and Fun Learning) to build a dynamic classroom atmosphere.

Method

This study uses the spiral model of Class Action Research (PTK) approach from Kemmis & McTaggart (1988), which emphasizes the existence of repetitive processes in the form of planning, implementation of actions, observation, and reflection in each cycle.

Arikunto (2013) stated that the percentage technique can be used to determine the level of student learning completeness by comparing the number of complete students with the entire student population. Meanwhile, in calculating the increase in learning activities, learning evaluation can be used to calculate the percentage and difference in scores as an indicator of increasing learning activities (Mulyasa, 2010). The comparison of data between two groups or two observation times can be analyzed through the difference in values to determine the increase in a variable (Sudijono, 2015).

The main purpose of this study is to increase student participation and English learning outcomes of 7H students of SMPN 6 Mataram through the use of interactive media *Wordwall* and *Games to Learn English*. The research subjects consisted of 42 students in grade 7H of SMPN 6 Mataram.

The research was conducted in two cycles, which included: (1) planning, (2) implementation of actions, (3) observation, and (4) reflection. The instruments used included student activity observation sheets, student response questionnaires, and teacher reflection notes.

Each cycle begins with a *pre-test* activity using *Wordwall* to measure initial knowledge, then continues with *Games to Learn English-based* learning, which focuses on mastering vocabulary and sentence structure. At the end of the cycle, a *post-test* and reflection on learning outcomes are carried out.

Research Subject and Location

The research was carried out at SMPN 6 Mataram with the subject of 42 students in class 7H in the even semester of the current school year. All students are involved in the learning and assessment process.

Research Design

Class Action Research (PTK) consists of **two cycles**, and each cycle goes through four stages:

1. Planning
2. Action Execution
3. Observation
4. Reflection

Details of Stages Per Cycle

CYCLE I

A. Cycle I Action Planning

At this planning stage, the teacher prepares all technical and pedagogical aspects before the action is given. The steps are not only administrative, but also take into account real classroom conditions, student characteristics, and limited facilities.

1. Analyzing the Results of the Initial Pre-Observation

This analysis is carried out before the cycle begins, through direct observation when the teacher teaches vocabulary topics using conventional methods (lectures + written exercises).

a. Identify low mastery of vocabulary and simple sentence structure

During the initial lesson, the teacher gives some routine instructions in English, such as "*mention some adverb of frequency that you know*", "*make a simple sentence using an adverb of frequency*". The majority of students are silent; some try to answer but misformulate the basic structure (e.g., "*I seldom help my mom*"). Out of 42 students, fewer than 10 students were able to compose simple sentences correctly.

From the teacher's notes, the low number of students who can compose sentences correctly can be seen as a problem of lack of vocabulary and word knowledge in English.

b. Finding a lack of student motivation to learn when the lecture method is used

During the initial lessons, only a few students pay attention. Other students tend to talk to friends or do not follow the learning activities in an orderly manner. The lecture method turned out to be less suitable for classes with high dynamics, such as 7H.

The teacher noted that students will be more active if the activity is made interactive and involves elements of competition, so it was decided to use *Wordwall* and *Games to Learn English*, which are known to be effective in attracting students' attention.

2. Compiling *Wordwall*-based lesson plans and *Games to Learn English*

The lesson plan is prepared not only based on the curriculum format, but also pays attention to the needs of the class by compiling more measurable learning objectives, such as "Students are able to mention adverbs

of frequency", "Students are able to make 5 simple sentences using adverbs of frequency". In addition, teacher also use the *Gamification-Based Learning* model to reduce students' awkwardness in speaking English.

3. Prepare Learning Media

a. Two sets of *Wordwall*, namely *Match-up Vocabulary*, to match pictures and words. Suitable for vocabulary warm-ups and *Maze games* to determine English word language.

b. A set of *Games to Learn English* for the introduction of vocabulary, percentages of words (seldom, always, never, etc.).

4. Developing an Assessment Tool

a. Pre-test *Wordwall* (10 questions)

Questions include *vocabulary identification*, *matching* words. Pre-tests are conducted individually to map initial abilities.

b. Post-test Cycle I

The questions are arranged with the same level of difficulty to measure the improvement of the objective after the action.

c. Student activity observation sheet

The observation sheet contains specific indicators such as the speed at which students respond to games, involvement in groups, and verbal/nonverbal participation.

d. Student response questionnaire

To find out if games make students more motivated, what they like, and in which parts they still struggle.

e. Teacher's field notes

Teachers note class dynamics, technical constraints, and student behavior that are not captured by numbers.

5. Coordination with Observers

Teachers collaborate with one observer (PPL peers) to record things like dominant students and passive students, and classroom conditions during the game.

6. Technical Device Setup

The teacher ensures that the technical aspects do not interfere with the implementation by checking the internet data connection, preparing laptops and LCD projector, and testing the display, ensuring the account *Wordwall* and *Games to Learn English*.

B. Implementation of Cycle I Actions

It was held in two meetings, 80 minutes each.

Meeting 1

1. Introductory Activities

The teacher opens the lesson by asking a simple vocabulary question that students are familiar with, for example: "*How often do you read a book?*" while showing pictures. It is used to defrost the atmosphere. After that, the teacher slowly explained the rules for using *Wordwall*, as well as the rules for playing, so that it would not be crowded.

2. Core Activities

a. *Wordwall Match-up Vocabulary*

Teachers display games through an LCD by visualizing images to make them more engaging and help students with weaker English skills.

b. Play individually

The goal is to measure each student's basic abilities without the intervention of friends.

3. Closing

The teacher asked the students how they felt after playing the first game and concluded the day's learning results.

Meeting 2

1. Advanced Core Activities

Teachers use *Games to Learn English* to practice their understanding of the presentation of *the adverb of frequency* in the form of pictures. *Wordwall* is also used to practice composing sentences that are displayed randomly. Students are divided into groups and asked to compose sentences based on random words that appear in the game.

2. Post-test Cycle I

The tests are done individually. Questions containing grammar and vocabulary are presented in the form of multiple choice in the LKS, and *sentence completion* is made by the teacher.

3. Closing

The teacher invites students to reflect on the difficulties experienced, for example, students are still confused about distinguishing *seldom* and *sometimes*, or confused about the order of words in the preparation of sentences.

C. Observation Cycle I

In this stage, some of the things that are subject to the teacher's observation include whether the students answer quickly, raise their hands, or just wait for a friend, some students are dominant, some passive, observers note this for improvement in cycle II, and verbal expressions ("*interesting, miss!*") and nonverbal (smile, focus on the screen, not play alone).

D. Reflection Cycle I

One of the obstacles faced during cycle 1 in the form of *the Wordwall Game* takes longer than the initial

calculation, because the pre-test and implementation are carried out by each student.

CYCLE II

A. Cycle II Action Planning

Teachers prepare Cycle II post-tests, including *multiple choice, arrange the words, and complete sentence completion*.

B. Implementation of Cycle II Actions

Meeting 1

1. Apperception

The teacher conducts a vocabulary review through a quick drill using drawing cards and questions.

2. Core Activities

The teacher shows *Games to Learn English* as a medium to practice composing sentences and memorizing *adverbs of frequency*. The teacher also shows random sentences on a *Wordwall* for students to compile in groups.

3. Quick Reflection

The teacher asks the students about their feelings and the difficulties that arise in adjusting to the activities of the next meeting.

Meeting 2

1. Core Activities

Students use *Wordwall* to compose sentences. The test is done individually.

3. Closing

The teacher concluded the learning results and gave appreciation for the improvement of the students.

C. Observation Cycle II

Some important notes obtained in this second cycle are that students are more active with digital-based learning and games. Passive students become more courageous to answer.

D. Reflection Cycle II

Teachers see that changes in students' behavior to being more courageous in trying to answer even if they are wrong, as well as a more controlled classroom atmosphere because students focus on games.

Result and Discussion

Results

1. Results of Cycle I

The implementation of Cycle I showed an initial change in students' involvement and ability to understand *adverbs of frequency* and compose simple sentences using *Wordwall* and *Games to Learn English* media. Although the improvement has not been optimal, several indicators show positive developments, such as the following:

a) Increased Activity and Participation

Some students begin to show quick responses when participating in games, such as raising their hands or trying to answer despite doubts. The students' expressions seemed more enthusiastic than when the lecture method was used. Students smile, focus on the screen, and follow the teacher's instructions in a more orderly manner. However, there are still some students who are passive and wait for a friend's answer.

b) Learning Outcomes (Pre-test & Post-test Cycle I)

In the pre-test, most students had difficulty mentioning *adverbs of frequency* or composing simple sentences. Less than 10 out of 42 students knew the type of adverb of frequency and could make sentences correctly.

In the post-test of Cycle I, there was an initial improvement: most students were able to name examples of *adverbs of frequency* and answer basic vocabulary questions. However, the structure of sentences is still often wrong, especially in determining the position of *adverbs*.

c) Observational findings in the form of dominant students still dominate the response, while passive students are not fully engaged.

2. Cycle II Results

In cycle II, some improvements can be seen compared to cycle 1, such as:

a) Student Activity and Courage

Students are seen to be more active in the digital learning process. Even passive students in the previous cycle began to dare to answer and get involved in the preparation of sentences in groups. The atmosphere of the class is also more controlled, more focused, and much more orderly than during the lecture method.

b) Learning Outcomes (Post-test Cycle II)

The improvement in students' abilities can be seen from the test results, which show that more students are able to answer grammar, vocabulary, and sentence questions correctly. Common mistakes, such as random word wording and *adverb placement of frequency*, are starting to decrease.

c) Quality of Learning Interactions

Digital games help students learn while playing. Students understand the material faster when given a competitive challenge.

Table 1. Development of Student Learning Outcomes in Cycle I and Cycle II.

Assessment Level	Number of Students Completed	Percentage (%)	Category
Pre-test Awal	8 out of 42 students	19%	Very Low
Post-test Cycle I	22 out of 42 students	52%	Enough
Post-test Cycle II	35 out of 42 students	83%	High

$$P = \frac{n}{N} \times 100\%$$

Figure 1: Calculating the Percentage of Learning Completeness

$$\text{Gain} = \frac{S_2 - S_1}{S_{\text{maks}} - S_1}$$

Figure 2: Calculating Gain Score between Cycles

Table 2. Student Activities and Participation per Cycle.

Activity Indicators	Cycle I (%)	Cycle II (%)	Information
Answering activity	45%	78%	Significant increase
Group cooperation	52%	85%	Much better
Verbal participation	38%	72%	Passive students start being active
Focus when learning	60%	88%	More controlled classes

$$\Delta A = A_2 - A_1$$

Figure 3: Calculating the Increase in Learning Activities

Table 3. Sentence Preparation Errors

Error Types	Cycle I (frequency of students)	Cycle II (frequency of students)	Trend
Penempatan <i>adverb of frequency</i>	28 students	10 students	Decreased
Random word arrangement	31 students	12 students	Decreased
Incorrect vocabulary selection	26 students	9 students	Decreased

Discussion

Results in both cycles showed that the use of Wordwall and Games to Learn English significantly increased learning engagement. Interactive digital media works effectively in high-dynamic classrooms; students become more focused, more active, and more enthusiastic about participating in learning activities. This shows that gamification is the right strategy in directing students towards participatory learning, especially at the junior high school level.

Improving students' ability to memorize *adverbs of frequency* and compose simple sentences shows that the use of games is able to speed up the process of understanding concepts. Visualization, competition, and repetitive exercises make it easier for students to grasp language patterns. Errors in Cycle I, such as *adverb placement* and *word selection*, indicate that students need structured practice and *scaffolding*. The improvement in Cycle II emphasized that the frequency of exercises plays an important role in strengthening student understanding.

One of the important findings was the increase in students' courage in trying to answer, even if it was wrong. Games create a non-judgmental environment so mistakes are considered part of the playing process. This has an impact on increasing students' confidence and willingness to try.

The application of *Wordwall* and *Games to Learn English* media is very relevant for English learning in junior high school. After all, it can increase student motivation, make the learning process more meaningful, make it easier for students to understand abstract concepts, and support differentiated learning because it can be accessed by both students quickly and slowly.

Overall, this learning also reflects the concept of *Assessment for Learning* as described by Anderson & Krathwohl (2001), where assessment is used not only to measure outcomes, but also as a reflection tool in the learning process.

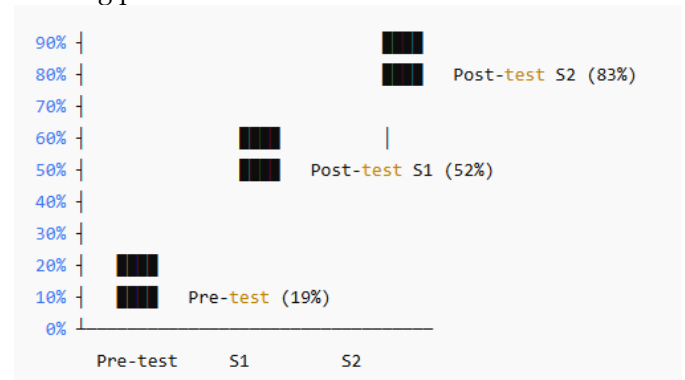


Figure 4. Increased Learning Completeness per Cycle

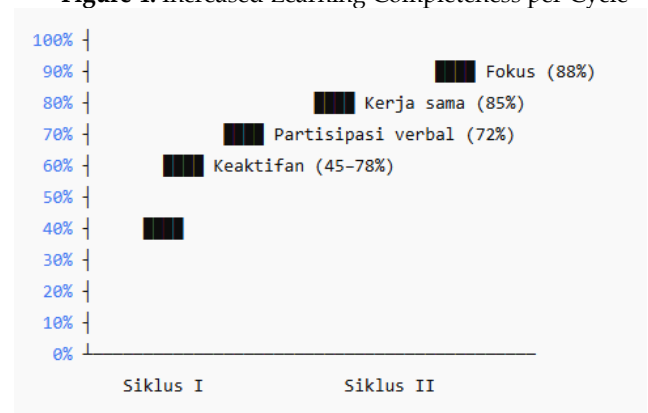


Figure 5. Increased Student Activity

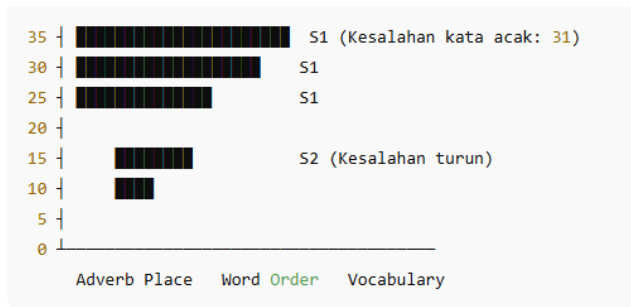


Figure 6. Reduced Sentence Preparation Errors

Conclusion

English learning in class 7H SMPN 6 Mataram initially showed low student involvement and weak mastery of vocabulary and sentence structure, especially the use of *adverbs of frequency*. This condition is in line with the initial finding that the dominant lecture method makes students passive, less motivated, and does not provide enough opportunities to build knowledge independently.

Through the implementation of two-cycle Classroom Action Research (PTK) by applying interactive media *Wordwall* and *Games to Learn English*, there have been significant changes in aspects of student activities, motivation, and learning outcomes. In Cycle I, student involvement began to increase even though it was not evenly distributed; Some students are still passive, and sentence structure errors still appear frequently. Nevertheless, the use of games has been proven to be able to attract students' attention and create a more lively, focused, and conducive classroom atmosphere.

In Cycle II, the improvement was more pronounced. Students who were previously passive begin to dare to answer, engage in group discussions, and show enthusiasm when participating in games. The results of the post-test also showed an improvement in the ability to recognize adverbs of frequency, understand their meaning, and compose simple sentences more precisely. A game-based learning environment provides space for students to learn without fear of making mistakes, thereby boosting their confidence.

Overall, this study proves that ***Wordwall and Games to Learn English are effective in increasing students' participation, motivation, and linguistic skills***, especially in vocabulary mastery and sentence structure preparation. This media is able to present more interactive, fun, and meaningful learning, in accordance with the principles of constructivist and active learning. Thus, the use of gamification is worthy of being recommended as an alternative learning strategy in English learning at the junior high school level, especially for high-dynamic classes.

Acknowledgments

The author expresses his gratitude to SMPN 6 Mataram, especially the Principal and Pamong teacher, who have provided full support during the research process. Thank you are also extended to the students of grade 7H who have actively participated in every stage of the learning action. Appreciation is given to colleagues who have helped as observers and provided valuable input in the implementation and reflection of each research cycle. The support and facilitation during PPL 2 also contributed to the smooth process of data collection and preparation of this article.

Author Contributions

The author plays a full role in the entire research process, starting from class problem identification, action planning, preparation of learning tools, implementation of *Wordwall* and *Games to Learn English*-based learning, observation, reflection, to data analysis. The author also writes the entire section of the article, including the introduction, research methods, results, discussion, and conclusions. Observers act as collaborative partners in helping to collect data on student activities and provide reflective feedback on each cycle, but are not involved in the writing of the script. As such, the main contribution of this research and article is the sole responsibility of the author.

Funding

This research does not receive special funding from government agencies, non-profit organizations, or the industrial sector. All costs related to the implementation of research, the use of learning media, and the preparation of articles are borne independently by the author.

Conflicts of Interest

The author states that there is no potential conflict of interest in this study. No professional, financial, or personal relationships can affect the objectivity of the research or the preparation of the article. All results and data interpretation were presented independently and based on empirical findings during the implementation of the classroom action research.

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