Using Dice-Based Activities in Enhancing Student Engagement in Contemporary Issues

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ABSTRACT

Student engagement is a crucial component of effective instruction, particularly in subjects such as contemporary issues, where active participation significantly enhances understanding. However, limited interaction and passive learning approaches often hinder student involvement. This study explores the use of dice-based activities in enhancing student engagement in contemporary issues among Grade 10 students during S.Y. 2024-2025 a specific public secondary school in Ozamiz City. The research utilized a single-group pretest posttest research design, involving 36 students selected through purposive sampling. Data were collected through research-designed checklist and rubric tools and analyzed using statistical methods, including mean, standard deviation, and t-test. The following were the study's key findings: the level of engagement of the students in Contemporary issues subject before the use of dice-based activities rubric assessment did not meet expectations, the level of engagement after the use of dice-based activities based on rubric assessment was outstanding, the level of engagement of the students in Contemporary issues subject before the use of dice-based activities based on checklist engagement was poor, the level of engagement after the use of dice-based activities based on checklist engagement was very good, there is a highly significant difference in the student's level of engagement in Contemporary issues subject before and after the use of dice-based activities based on rubric assessment, and there is a highly significant difference in the student's level of engagement in Contemporary issues subject before and after the use of dice-based activities based on checklist engagement. The use of interactive, game-based strategies has a significant positive effect on increasing student participation and interest in the subject. Future researchers could look into how using games in teaching affects student engagement over time and in different subjects.

Index Terms; contemporary, dice-based, engagement, issues, games.

INTRODUCTION

In the rapidly changing context of education, encouraging student participation is an utmost priority. This study investigates the surprisingly effective application of dice as an interactive tool to enhance student participation and interest in the classroom. Through an examination of the rich applications of dice across multiple learning environments, we aim to demonstrate their comprehensive ability to revitalize conventional learning experiences and transform them into participatory and memorable ones. Play fulfills simple human needs by enhancing social connections and allowing individuals to experience the nature of their ideal selves. Games promote student engagement by applying intrinsic motivation, critical thinking, and creative problem-solving (Ruiz-Ezquerro, 2021). The integration of game-based activities into the curriculum could prove to be an effective approach for teachers, aiming to enhance student engagement and learning achievement in this subject (Tolentino et al., 2024).

The Junior High School Araling Panlipunan curriculum emphasizes the acquisition of major skills and values related to history, economics, and contemporary world problems. However, other students often are not positive about their learning in the Social Studies subject. A common issue is the decline in student participation, where conventional teaching approaches often fail to capture students' interests and stimulate their active involvement. This alienation is detracting from their opportunity to engage with the lessons and exercise their critical thinking,

which requires creative approaches such as the use of dice activities to achieve a more engaging and challenging learning process. Cooperative learning and lecture-discussion teaching strategies are the preferred methods for Social Studies students. It suggests that Social Studies teachers should be well-versed in diverse teaching strategies that will meet all learners' requirements and prevent boredom during class discussions. (Education, 2020).

Araling Panlipunan is one of the more challenging subjects today because of its complexity (Tomines et al., 2021). Teachers' practices have a significant influence on student success, transforming classrooms into lively spaces where engagement and support foster academic achievement (Salva & Labitad). Faculty and staff are encouraged to embrace new teaching trends to inspire students in contemporary issues. It is also recommended that teachers of contemporary issues refrain from relying solely on pen and paper. Instead, they should consider using effective materials that motivate students to explore their ideas (Ofiaza, 2023).

It is common for Araling Panlipunan 10 students to lag because they are accustomed to a structure that focuses on lectures and memorization, rendering theories such as globalization and political systems impersonal and detached from their daily lives. This disconnection leads to passive learning and less critical thinking, so there is a need for interactive approaches, such as the use of dice games, to make the lesson more engaging, relevant, and interesting for students. The practical application of gamification as a formative strategy in various educational stages can be reliably employed to make gender a category for analysis in teaching social sciences (Ortega & Gomez, 2020).

The goal of the Grade 10 Araling Panlipunan Contemporary Issues subject is to show a clear understanding of the environmental, economic, political, human rights, educational, and civic responsibility issues that nations face today. This involves using skills in investigation, data analysis, research, critical thinking, communication, fairness and informed decision-making (Araling Panlipunan Curriculum Guide, 2016). According to the K+12 Enhanced Basic Education Curriculum, Social Studies will help learners participate actively and effectively as citizens of the country. As a secondary school course, Social Studies aims to help individuals understand their social roles. It reflects areas of social sciences and citizenship, including history, geography, psychology, philosophy, political science, and justice. This course combines different learning areas within a unit or theme.

There is a gap in practical knowledge in the prior research. The existing literature lacks thorough studies. Some teaching strategies, such as dice-based activities, remain underexplored in Araling Panlipunan for Grade 10 students in Ozamiz City, Misamis Occidental. Only a few studies assess their effects on communication, teamwork, leadership, negotiation, and understanding different perspectives. To address these issues, the researcher will use a teaching strategy that incorporates dice-based activities. This approach uses dice as a tool to bring randomness and gamification into learning. It encourages engagement and interaction by assigning tasks, challenges, or discussions based on the results of a roll (Miles, 2017).

This study aims to investigate and assess the viability of incorporating dice-related activities into the classroom as a means of promoting student engagement, critical thinking, and active participation in complex learning subjects. This investigation aims to provide educators with realistic recommendations for incorporating more dynamic and interactive approaches to learning tailored to the diverse interests and needs of students under the Araling Panlipunan 10 curriculum. The importance of this research lies in its ability to provide a hands-on and engaging teaching method that addresses the issue of low student participation in contemporary subjects. With the inclusion of dice activities, the study can equip teachers with new tools to integrate active participation and critical thinking, ultimately leading to improved learning outcomes. Through such strategies, the teacher releases the students to learn by applying their critical thinking skills so that they may be able to engage in discussing issues of vital importance and challenges that face them in their daily lives (GARCIA, 2021).

Strategy

Dice-based activities aim to enhance students' engagement in discussions about contemporary issues during the 2024-2025 school year. Using dice in games encourages interactive learning, where students engage with historical, economic, and social concepts through chance-based actions. This approach boosts participation and critical thinking. Collaborative game-based activities help students acquire knowledge and skills, positively

impacting their learning retention (Concepcion, 2023). Gamification is a recommended teaching strategy because it can effectively boost students' academic motivation (Villacarlos et al., 2024).

The integration of game-based learning offers many benefits and influences teaching and learning activities (Ningsih, 2023). Game-based learning is an innovative technique that can enhance student motivation, emotional involvement, and enjoyment (Hartt et al., 2020). To achieve effective educational interventions, learner engagement is essential, and this can be challenging if students lack motivation. Games provide strong motivators that encourage people to engage in less appealing activities. However, gamifying education does not automatically guarantee motivation or positive learning outcomes (Laine & Lindberg, 2020).

Implementing game-based activities, especially dice-based ones, is crucial for increasing student engagement by making lessons more interactive and enjoyable. This method promotes active participation, fosters collaboration among students, and helps them grasp important historical, economic, and social concepts in a fun, hands-on manner. Game-based learning has been viewed as a means to transform education into a more engaging and experiential approach to learning. So far, its implementation in education has shown promise, but more evidence is needed for widespread adoption (Harteveld, 2020). Teachers need to facilitate games, guide students in applying concepts, and ensure that learning objectives are met while maintaining an engaging and supportive classroom environment.

This strategy can have both advantages and disadvantages. The benefit of dice-based activities is that they enhance student engagement and motivation by adding fun, unpredictability, and active participation, thereby reinforcing learning interactively. On the downside, it may not suit all learning styles, and if not structured effectively, it could lead to distractions or a loss of focus on the lesson content.

Action Research Questions

This action research aimed to enhance student engagement in Contemporary issues during the 2024-2025 school year. Specifically, this study sought to answer the following questions:

1. What is the level of engagement of the students in Contemporary issues subject before the use of dice-based activities based on rubric assessment?

2. What is the level of engagement of the students in Contemporary issues subject after the use of dice-based activities based on rubric assessment?

3. What is the level of engagement of the students in Contemporary issues subject before the use of dice-based activities based on checklist engagement?

4. What is the level of engagement of the students in Contemporary issues subject after the use of dice-based activities based on checklist engagement?

5. Is there a significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on rubric assessment?

6. Is there a significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on checklist engagement?

METHODS

Research Design

The single-group pretest-posttest design was employed in this study to increase active class participation using dice-based activities. Action design research, or ADR, has been widely accepted and utilized globally as a prominent research approach in information systems research (Cronholm & Gobel, 2022). This design was suitable for making learning an enjoyable experience, using dice-based activities to engage Grade 10 learners actively in debates on current issues while increasing confidence.

Research Setting

The research was conducted at the junior high school level, specifically with Grade 10 students of a particular public secondary school in Ozamiz City. It was a full secondary school that welcomes students from Grade 7 up to Grade 12. This school offers Araling Panlipunan subjects and welcomes students from diverse backgrounds. It offers department-prescribed subjects, one of which is Araling Panlipunan.

Respondents of the Study

The participants in the research were 36 Grade 10 students from one of the sections taught by the researcher. They were sampled purposively. The participants will be selected according to the following criteria: students enrolled in Grade 10 for the 2024–2025 school year, students identified as having low academic performance, and students who agree to participate in the research. The researcher ensured that these parameters were met before administering the survey. However, other parts of the same grade level will not be included in the researcher's study.

Research Instruments

The researcher used the following research instruments as the data gathering tool:

A. Student's Engagement Using Dice-based Activities Based on Checklist Engagement. The instrument, designed by a researcher, was created to assess students' engagement in the Contemporary Issues subject using a 4-point Likert scale, with responses scored as follows: strongly agree (4), agree (3), disagree (2), and strongly disagree. The instrument comprises 30 items, grouped into 5: Paggamit ng Dice-Based Activities (5 items), Motivasyon sa Pagkatuto (5 items), Pagpapahusay sa Konsentrasyon at Partisipasyon (5 items), Pagpapalalim ng Pagkatuto at Akademikong Pagganap (5 items), Pakikinig at Pagtanggap ng Pagsusuri ng Guro (5 items). To ensure the validity of the test, the researcher will have experts evaluate it, including the research adviser, school head, principal, and cooperating teacher. The researcher will conduct a pilot test with a separate group of participants not included in the study and will ensure that the instrument achieves a Cronbach's Alpha between 0.7 and 1.0. the instrument will be used for both the pretest and posttest.

B. Student's Engagement Using Dice-based Activities Based on Rubric Assessment. The Instrument which was developed by the researcher to evaluate students' performance and engagement during the implementation of dice-based learning tasks. This rubric includes four criteria: Level of Engagement, Listening Skills, Collaboration, and Critical Thinking. Each criterion is assessed using a 4-point performance scale, with scores corresponding to the following descriptors: 4 – the student consistently demonstrates the skill, 3 – the student often demonstrates the skill but with occasional lapses, 2 – the student rarely shows the skill without prompting or reminders, and 1 – the student never or almost never demonstrates the skill. This rubric was used by the researcher during classroom observations to provide a structured and objective assessment of student engagement and participation throughout the implementation of dice-based activities in the Contemporary Issues subject.

C. Lesson Plan. The researcher developed a lesson plan that included dice-based activities to improve student engagement in contemporary issues, a strategy often discussed in education. Before implementing it, the cooperating teacher carefully reviewed and revised the lesson plan. The lesson was then conducted with Grade 10 students at a public high school in Misamis Occidental during the 2024-2025 school year.

Data Gathering Methods

Pre-Implementation Phase. The researcher sought permission from the dean of the College of Education. After receiving it, approval was requested from the Schools Division Superintendent, the school principal, and the cooperating teacher to conduct the study. Data collection commenced only after all necessary permits had been obtained. At this stage, assessments and activities were prepared in accordance with the teacher's lesson plans and PowerPoint presentations.

Implementation Phase. The researchers presented and discussed lessons using a dice-based activity strategy in

the classroom. Students received detailed instructions on how the dice-based activity strategy works, including the rules and its use in activities and assessments. After a month of implementing the strategy, an assessment was conducted to measure student engagement in the Contemporary Issues subject.

Post-Implementation Phase. This phase included concluding, offering recommendations, proofreading, editing, and finalizing the research. It also involved effectively sharing the research findings with the intended audience or relevant groups.

Ethical Considerations

The study obtained informed consent from the subjects in accordance with ethical standards prior to the survey. As part of ethical practice, the researchers provided participants with a full briefing on the Data Privacy Act of 2012. This ensured that personal information would be protected and that accountability would be maintained when handling sensitive data.

Throughout the process, participants were fully informed about the study's goals, the potential benefits to them, and the significance of their participation. The researchers emphasized the confidentiality of the collected data and assured participants that their anonymity would be maintained throughout the study.

Data Analysis

The study used the following tools in analyzing the data gathered with the use of Minitab Software:

Mean and Standard Deviation. This will be used in identifying the level of performance of students before and after the use of game-based learning.

Paired T-Test. This tool will be used to explore the significant difference in students' performance before and after the use of game-based learning.

RESULTS AND DISCUSSIONS

Level of Engagement of the Students in Contemporary Issues Subject Before the Use of Dice-Based Activities Based on Rubric Assessment

Table 1 illustrates the level of student engagement in the Contemporary Issues subject before the use of dice-based activities, based on a rubric assessment. The findings indicate that students tended to fall under the category "Did Not Meet Expectations" (M = 8.25, SD = 2.67).

The mean level of engagement (M) fell within the "Did Not Meet Expectations" range, indicating that, overall, students initially showed little interest and participation in class activities. The standard deviation (SD) provides a measure of how spread out these initial levels of engagement were (M = 8.25, SD = 2.67). Hence, the low average score indicates a lack of interest and participation. In contrast, the variance in scores suggests some level of diversity in participation among students, albeit within the lowest-performing category (M = 8.25, SD = 2.67). This suggests that although the majority of students demonstrated a lack of interest and participation, some were more or less active than the mean. However, activity was consistently low, underscoring the need for a more engaging and stimulating teaching approach to promote greater student participation in the subject. While student engagement is central to achieving the desired educational outcomes, scholars in educational psychology have noted that it is seldom easy to define, as it tends to be a complex and multifaceted concept (Wong & Liem, 2022).

Students do not share the same knowledge or perceptions regarding their school experience. Their perceptions regarding teachers, the curriculum, and other students can differ significantly. Therefore, any exploration of students' experiences or knowledge of school life must first examine how some students acquire common perceptions and how these perceptions impact one another. In other words, understanding student interactions more clearly is crucial. It is only after gaining a proper understanding of this process that we can truly determine what persons or groups actually know (Furlong, 2020). Student engagement is a dynamic and multi-dimensional concept comprising behavior, feelings, and mental processes. The extent to which teachers influence this

engagement is a fact. Therefore, teachers are responsible for ensuring that students actually relate to their learning, making them feel engaged in ways that matter (Pedler et al., 2020). Additionally, beginning teachers who are learning new teaching approaches should be eager to engage in reflective, independent thinking during the learning process (Fink et al., 2023). The study's findings suggest that educators need to explore and implement more engaging instructional methods to increase student engagement in the subject.

This establishes a baseline for evaluating the effectiveness of interventions designed to enhance student engagement. Thus, the behavior of classroom teachers plays a crucial role in influencing students' learning. Nevertheless, it remains crucial to determine which specific teaching strategies are most effective in promoting learning in inclusive classrooms (Finkelstein et al., 2021). A method that succeeds in one situation may not be so effective in another—teaching is not a cookie-cutter process. Each classroom is unique, and it is the teacher's responsibility to considerately tailor and adapt to the individual needs of their students, subject, and setting (Chew & Cerbin, 2021).

Table 1 Level of Engagement of the Students in Contemporary Issues Subject Before the Use of Dice-Based Activities Rubric Assessment

(n=36)

Level of Participation	M	SD
Did Not Meet Expectations	8.25	2.67

Note Scale: 17-20 (Outstanding); 16 (Very Satisfactory); 14-15 (Satisfactory); 12-13 (Fairly Satisfactory); 1-11 (Did Not Meet Expectations)

Level of Engagement of the Students in Contemporary Issues Subject After the Use of Dice-Based Activities Rubric Assessment

Table 2 presents the level of student engagement in the Contemporary Issues subject after the implementation of dice-based activities, based on a rubric assessment. It was found that students overall fell within the "Outstanding" category (M = 18.14, SD = 1.89).

The mean level of engagement (M) at 18.14 is in the "Outstanding" range, indicating that, on average, students exhibited high levels of participation and interest in classroom activities after using dice-based activities. The standard deviation (SD) indicates the amount of variation in these post-intervention engagement measures (M = 18.14, SD = 1.89). The moderately low standard deviation implies that the levels of engagement were highly uniform among the students, with scores bunched tightly around the high average. A high average score implies a high level of interest and participation, and a tight spread of the scores implies a high level of consistency in engagement among students, all with the highest performance (M = 18.14, SD = 1.89). This implies that activities involving dice were associated with high student engagement in the topic, with the majority of students demonstrating a high level of interest and participation.

Dice activity lessons have a significant impact on students' learning behavior. This remarkable variation in learning behavior suggests that interactive techniques have a favorable impact on student learning (Mokles & Sheikh, 2021). Dice games are an effective instructional tool that increases student participation and facilitates improved learning by providing interactive, experiential opportunities (Diri & Ogiga, 2025). This game also provides excellent opportunities for discussion later, allowing students to learn even more. Surveys indicate that students thoroughly enjoy playing the game, and comparing their pretest and posttest scores reveals that they have learned significantly from it (Luo & Munson, 2022).

The results of the study suggest that incorporating dice-based activities into the classroom can significantly enhance student engagement, thereby fostering a more interactive and enthusiastic learning environment. This suggests that such teaching methods may be effective in maintaining high levels of participation and interest, ultimately contributing to improved learning outcomes. The game is not intended to teach specific content; however, teachers can use it to introduce material and promote discussions that help build the background

knowledge required for successful learning (McClough, 2021). Games, by their very nature, encourage active participation and reward skill acquisition, which is consistent with the principles of active learning. The dice game, in particular, boosted students' participation and created higher enthusiasm for learning (Maurer et al., 2020).

Table 2 Level of Engagement of the Students in Contemporary Issues Subject After the Use of Dice-Based Activities Rubric Assessment (n=36)

Level of Participation	M	SD
Outstanding	18.14	1.89

Note Scale: 17-20 (Outstanding); 16 (Very Satisfactory); 14-15 (Satisfactory); 12-13 (Fairly Satisfactory); 1-11 (Did Not Meet Expectations)

Level of Engagement of the Students in Contemporary Issues Subject Before the Use of Dice-Based Activities Based on Checklist Engagement

Table 3 illustrates the level of student engagement in the Contemporary Issues subject before the introduction of dice-based activities, using a checklist as the measure of engagement. Results show that students tended to fall under the "Poor" category (M = 2.05, SD = 0.18).

The mean engagement level (M) was in the "Poor" category, meaning that, generally, students showed minimal active engagement and participation according to the checklist standards initially. The standard deviation (SD) indicates the magnitude of variation of these initial engagement scores (M = 2.05, SD = 0.18). This extremely low standard deviation indicates that the levels of engagement were extremely consistent across the students, with the scores tightly grouped around the poor average. The low average score indicates a general absence of active engagement, and the very low spread of the scores reflects an extremely high level of consistency in this low engagement across the student group (M = 2.05, SD = 0.18). This suggests that, prior to the implementation of dice-based activities, students consistently demonstrated a low level of active participation in the subject, underscoring a possible need for strategies to increase their engagement.

Students' academic engagement is influenced by a range of factors, including personal student characteristics, the teacher, teaching approaches, peers, and other aspects of the learning environment. These are the cognitive, metacognitive, affective, social, task-related, communicative, and language-specific aspects (Amerstorfer & Freiin von Münster-Kistner, 2021). Children with behavioral difficulties, whether externalizing or internalizing, are more likely to lag in their education and fail to graduate from school, typically because their involvement with school is reduced. Such disengagement can significantly hinder their ability to succeed and graduate (Olivier et al., 2020). Thus, the absence of social cohesion and motivational issues are often described as being the leading cause of students' disengagement and silence during activities (Aubrey, 2022). The outcomes indicate a clear need for targeted strategies to enhance student engagement in the Contemporary Issues course.

Since the participation rate is low, teachers should consider incorporating more participatory and engaging activities, such as dice games, to increase learner engagement. Managing the root causes, such as motivation and social cohesion, is also critical to creating a more participative and effective learning environment. Learner engagement is also crucial to guaranteeing quality learning experiences (Aubrey, 2022). Further, understanding and producing educational authenticity can lead to a variety of valuable outcomes, as highlighted in the current literature for authentic assessment (Rola Ajjawi et al., 2025).

Table 3 Level of Engagement of the Students in Contemporary Issues Subject Before the Use of Dice-Based Activities Based on Checklist Engagement (n=36)

Level of Engagement	M	SD
Poor	2.05	0.18

Note Scale: 3.25-4.00 (Very Good); 2.50-3.24 (Good); 1.75-2.49 (Poor); 1.00-1.74 (Very Poor)

Level of Engagement of the Students in Contemporary Issues Subject After the Use of Dice-Based Activities Based on Checklist Engagement

Table 4 presents the findings on student engagement in the subject of Contemporary Issues after the implementation of dice-based activities. The results revealed an overall level of engagement classified as "Very Good." This high mean score suggests that incorporating dice-based activities was effective in increasing students' participation and interest. (M = 3.70, SD = 0.12).

Students were found to be highly engaged, attentive, and responsive in lessons that utilized these interactive strategies. Active participation is an important element of successful learning, as it facilitates increased understanding, enhanced knowledge retention, and improved academic performance. The low standard deviation also signifies a high degree of consistency in participation throughout the class, implying that most students shared positive intervention effects. (M = 3.70, SD = 0.12). This supports the capacity of game-based approaches, such as dice activities, to promote inclusive, meaningful, and sustained student participation in the classroom.

The use of gamification within learning environments is widely recognized as an effective way to enhance learner motivation, promote participation, and foster social interaction within the learning environment (Hashim et al., 2023). Therefore, educational games in the classroom enhance students' capacity to understand concepts more intuitively and enrich their overall understanding (Diri & Ogiga, 2025). These games have been a part of human society since the beginning of recorded history, encompassing various forms such as card games, board games, dice games, and sports. They have been traditionally used as a means of social communication, mental growth, and cultural expression in various civilizations and epochs (Qadir et al., 2024). The results of this study suggest that incorporating dice-based activities into the Contemporary Issues curriculum can significantly enhance student engagement.

The widely reported high rates of engagement and focus suggest that these interactive approaches are indeed successful in developing a supportive and engaging learning context. This, in turn, lends strength to the incorporation of gamified pedagogical practices as a realistic and empirically verified means of enhancing student motivation, increasing levels of understanding, and encouraging long-term participation among diverse learner groups. A study has asserted that board games are considered a crucial catalyst for attainment, motivation, fun, and involvement in academic settings (Hashim et al., 2023). Additionally, a competent teacher focuses on understanding students' potential, gender, prior learning, motivations, and expectations so that they can plan learning experiences that are relevant and effective.

Table 4 Level of Engagement of the Students in Contemporary Issues Subject After the Use of Dice-Based Activities Based on Checklist Engagement (n= 36)

Level of Engagement	M	SD
Very Good	3.70	0.12

Note Scale: 3.25-4.00 (Very Good); 2.50-3.24 (Good); 1.75-2.49 (Poor); 1.00-1.74 (Very Poor)

Significant Difference in the Students' Level of Engagement in Contemporary Issues Subject Before and After the Use of Dice-Based Activities Based on Rubric Assessment

Table 5 presents the analysis of the significant difference in students' levels of engagement in the Contemporary Issues subject before and after the use of dice-based activities, based on rubric assessment. The information presented comprises the mean (M), standard deviation (SD), t-value, p-value, and conclusion of the null hypothesis (Ho). The findings reveal a "highly significant" difference in students' involvement prior to and subsequent to the introduction of dice-based activities. In particular, the degree of interaction prior to the application of dice-based activities (M = 8.25, SD = 2.67) versus subsequent to their application (M = 18.14, SD = 1.89) shows a very large increase (t = 29.30, p = 0.00). The p-value here is smaller than 0.01, showing a statistically extremely high difference.

Based on these results, the null hypothesis (H0) that there is no significant difference in the level of student

engagement in the Contemporary Issues subject before and after the implementation of dice-based activities, as assessed by the rubric, is rejected. The inclusion of dice-based activities has a positive and strongly significant effect on students' engagement in the Contemporary Issues subject. The significant increase in the mean engagement score following the intervention indicates that integrating these activities effectively enhances student participation and interest in the course content.

Introducing the use of a dice game provides a new and engaging way of engaging young children with basic arithmetic. This fun learning experience energizes children's motivation and engagement in the curriculum. This can lead to a positive first experience of learning (Sari & Mwakifuna, 2023). Therefore, this ongoing development of student motivation is an important component of a teacher's work (Raju et al., 2021). In addition, these engagement strategies included stimulating behavioral engagement through activities that promoted focus, effort, resilience, and flexibility.

Affective engagement was reinforced through activities that promoted group bonding, interaction, empathy, and trust. Cognitive engagement was stimulated by activities stimulating discussion and relevance to the self (Vermeulen & Volman, 2024). Therefore, the dependability of applying rubrics stems from their role as precise guides for evaluating student work and providing feedback on the skills and knowledge students exhibit (Gallardo, 2020). The substantial increase in engagement levels following the introduction of dice-based activities indicates the efficiency of interactive methods in promoting student participation.

This implies that incorporating game-based approaches can enhance students' emotional, behavioral, and cognitive engagement in learning within classrooms. The consistent findings also support the utility of rubric-based measures in offering accurate insights into students' engagement. In today's modern world, students are increasingly interested in games, offering a valuable opportunity for teachers to leverage this interest to enhance engagement and motivation in learning (Nadeem et al., 2023). Furthermore, students' views on what makes a good teacher and how their teachers and classroom environment influence their emotional and behavioral engagement with school (Thornberg et al., 2022).

Table 5 Significant Difference in the Students' Level of Engagement in Contemporary Issues Subject Before and After the Use of Dice Based Activities Based on Rubric Assessment (n= 36)

Variables	M	SD	t-value	p-value	Decision
Before the Use of Dice-Based Activities Based on Rubric Assessment	8.25	2.67	29.30	0.00	Reject Ho
After the Use of Dice-Based Activities Based on Rubric Assessment	18.14	1.89			

Ho: There is no significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on rubric assessment

Note: Probability Value Scale: **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not Significant)

Significant Difference in the Students' Level of Engagement in Contemporary Issues Subject Before and After the Use of Dice-Based Activities Based on Checklist Engagement

Table 6 presents the statistical analysis of the difference in student engagement levels in the Contemporary Issues subject before and after the used of dice-based activities, as evaluated through a checklist of engagement. The data includes the mean (M), standard deviation (SD), t-value, p-value, and the decision regarding the null hypothesis (Ho).

The findings show a "highly significant" discrepancy in engagement levels after the intervention. In particular, student engagement before the introduction of dice-based activities (M = 2.05, SD = 0.18) was significantly higher than afterward (M = 3.70, SD = 0.12), as indicated by a t-value of 29.30 and a p-value of 0.00. Because the p-value is below 0.01, the finding is statistically highly significant. Therefore, the null hypothesis that there is no significant difference in students' engagement before and after the implementation of dice-based activities

is rejected. These results provide strong evidence that implementing dice-based techniques significantly increases students' engagement, as indicated by the checklist score. There are no non-significant variables highlighted in this table, as the analysis revealed a highly significant difference ($p < 0.01$).

The methods of actively engaging students describe several real-time and self-directed engagement strategies, cite literature that confirms their efficacy, and offer suggestions for improving active engagement independent of the particular strategies used (Prince et al., 2020). Therefore, adopting successful teaching methods, such as gamified activities, collaborative work, and peer-supported learning, can contribute to students' intellectual development, emotional well-being, and academic behavior, leading to more active involvement in the learning process (Munna & Kalam, 2021). In summary, the use of gamification brings fun and creativity into instruction at the classroom level. It is an accepted phenomenon that implementing engaging games designed for various learners creates a more efficient classroom environment. Prioritizing interactive and innovative learning spaces in modern 21st-century education is fundamental. Learning infused with fun games promotes better learning outcomes. Therefore, gamification is said to encourage learners to become active and responsible stakeholders in their education (Mee et al., 2022).

Table 6 Significant Difference in the Students' Level of Engagement in Contemporary Issues Subject Before and After the Use of Dice-Based Activities Based on Checklist Engagement (n= 36)

Variables	M	SD	t-value	p-value	Decision
Before the Use of Dice-Based Activities Based on Checklist Engagement	2.05	0.18	29.30	0.00	Reject Ho
After the Use of Dice-Based Activities Based on Checklist Engagement	3.70	0.12			

Ho: There is no significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on checklist engagement

Note: Probability Value Scale: **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not Significant)

SUMMARY AND FINDINGS

Summary

Student engagement is a crucial component of effective instruction, particularly in subjects such as contemporary issues, where active participation significantly enhances understanding. However, limited interaction and passive learning approaches often hinder student involvement. This study explores the use of dice-based activities in enhancing student engagement in contemporary issues among Grade 10 students during S.Y. 2024-2025 a specific public secondary school in Ozamiz City. The research utilized a classroom-based action research design, involving 36 students selected through purposive sampling. Data was collected through a research-designed checklist and rubric tools and analyzed using statistical methods. This study aimed to answer the following question: 1) What is the level of engagement of students in the Contemporary Issues subject before the introduction of dice-based activities, as assessed by rubric? 2) What is the level of engagement of the students in Contemporary issues subject after the use of dice-based activities based on rubric assessment? 3) What is the level of engagement of the students in Contemporary issues subject before the use of dice-based activities based on checklist engagement? 4) What is the level of engagement of the students in Contemporary issues subject after the use of dice-based activities based on checklist engagement? 5) Is there a significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on rubric assessment? 6) Is there a significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on checklist engagement?

Findings

The following are the salient findings of the study: The level of engagement of students in the Contemporary

Issues subject before the use of a dice-based activities rubric assessment did not meet expectations. The level of engagement of students in the Contemporary Issues subject after the use of dice-based activities, based on rubric assessment, was outstanding. The level of engagement of the students in Contemporary issues subject before the use of dice-based activities based on checklist engagement was poor. The level of engagement of the students in Contemporary Issues subject after the use of dice-based activities based on checklist engagement, was very good. There is a highly significant difference in the students' level of engagement in the Contemporary Issues subject before and after the use of dice-based activities based on rubric assessment. There is a highly significant difference in the students' level of engagement in Contemporary issues subject before and after the use of dice-based activities based on checklist engagement.

CONCLUSION AND RECOMMENDATIONS

Conclusions

Based on the findings of this study, the following conclusions can be drawn: There is a clear need for more engaging and motivating teaching strategies to foster greater student involvement in the Contemporary Issues subject. The use of interactive, game-based strategies has a significant positive effect on increasing student participation and interest in the subject. Traditional teaching methods have limitations in sustaining student attention and active participation, which hinders engagement. Gamification, specifically through dice-based activities, has a positive impact on promoting active learning and enhancing student interaction in the classroom. There is a significant difference in student engagement before and after the use of dice-based activities, with the intervention showing a marked improvement in student involvement. The significant difference in student engagement before and after the use of dice-based activities is consistent across various assessment methods, demonstrating the effectiveness of this approach in fostering sustained participation.

Recommendations

Teachers may use more engaging activities, such as games, to encourage students' involvement in the Contemporary Issues subject. Teachers may continue to use interactive games to help students stay engaged and active in lessons. Students can become more engaged in class by participating in activities and exploring new learning methods. Students may take the initiative to learn by working with others and participating in hands-on activities. Schools may encourage teachers to try new teaching methods, such as dice-based activities, to make lessons more engaging and effective. Schools may offer training to teachers on how to utilize interactive and game-based methods to enhance student engagement. Future researchers should investigate how the use of games in teaching affects student engagement over time and across different subjects.

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