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Enhancing Pupils' engagement in grade 4 classroom through the use of alternative response cards

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Abstract

Pupil engagement is a key factor in creating a practical and interactive learning environment, especially among younger learners who may struggle to maintain focus during traditional classroom discussions. This study aimed to determine the effectiveness of using alternative response cards in enhancing pupil engagement among Grade 4 students during S.Y. 2023–2024 in a public institution in the city of Ozamiz. The study employed a classroom-based action research design and involved 39 Grade 4 pupils selected through purposive sampling. Research-made rubric and checklist were used to gather data. The data was interpreted using statistical tools, mean, standard deviation, and t-test. The following were the key findings of the study: the level of pupils' engagement in Grade 4 classrooms before the implementation of alternative response cards based on rubric assessment was satisfactory, the level of pupils' engagement in the Grade 4 classroom after the implementation of alternative response card based on rubric assessment was outstanding, the level of pupils' engagement in Grade 4 classrooms before the implementation of alternative response cards based on checklist observation was low, the level of pupil engagement in the Grade 4 classroom after the implementation of alternative response card based on checklist observation was high, and there is a highly significant difference in the level of pupil engagement in the Grade 4 classroom before and after the implementation of the alternative response card based on rubric assessment and checklist observation. After using Alternative Response Cards, engagement improved to a high level based on checklist observations, demonstrating increased involvement and interest. Curriculum planners may include interactive and gamified teaching approaches, such as response cards, in instructional guidelines to enhance pupil engagement and motivation across subjects.

Keywords: Alternative Response Cards; Classroom Participation; Grade 4 Education; Inclusive Strategies; Pupil Engagement

1. Introduction

Pupil engagement is a crucial component in fostering a practical and interactive learning environment, particularly for young learners who often face challenges in sustaining attention during conventional classroom discussions. This issue is currently evident in a public elementary school in Ozamiz City, where teachers have observed a noticeable decline in student attentiveness and participation during lessons. Pupils appear disengaged and less responsive, making it challenging to maintain a dynamic classroom atmosphere. This concern has been confirmed through classroom observations and formative assessments, which revealed that a significant number of students struggle to stay focused and actively involved throughout the learning process.

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A key objective for educators is to cultivate student engagement to help students develop a sense of appreciation for learning and aim for higher educational achievement. For students to truly value their education, they must feel included, be able to share their thoughts, and actively participate in meaningful ways within every learning environment they encounter. The study underscores the significance of implementing policies and practical interventions aimed at fostering strong student-teacher relationships, wherein students feel recognized, valued, and genuinely heard within the learning environment (Cunningham, 2020).

Traditional classroom settings often lack sufficient interactive elements, potentially hindering the learning process for young students, particularly in areas like phonetics, where active participation is crucial. This study examines how an interactive learning approach was created and applied to make learning more engaging and effective for school children (Daniel & Suleiman, 2023). Thus, the requirements of education call for student-focused teaching methods across all levels of schools and institutions (Balaskas et al., 2023). Additionally, instructional games used in the classroom encourage student participation and incorporate technology to support exam readiness. The goal of this experiential learning activity is to enhance students' engagement and understanding of the subject matter through technology-driven games, leading to higher exam scores (Baszuk & Heath, 2020). The use of a fun learning approach is an integral part of the teaching methods applied by educators. This approach is recognized as a fundamental element in pedagogy, particularly within the context of teacher-led instruction (Mokhtar et al., 2023). Indeed, the essence of edutainment learning lies in creating a fun, comfortable, and enjoyable learning experience, where the interaction between teachers and students is close, friendly, and harmonious, much like a friendship. This environment helps students feel relaxed, unafraid, and able to engage freely and happily. This study aimed to evaluate the effectiveness of the edutainment learning approach (Feiyue, 2022).

This research aims to examine the effectiveness of using alternative response cards in enhancing pupil engagement in Grade 4 classrooms. By providing students with multiple ways to respond and participate in lessons, the study seeks to determine whether these tools can help create a more inclusive and supportive learning environment. This research explores how alternative response cards influence student participation, motivation, and overall engagement, particularly for students who are less likely to participate verbally. Ultimately, the goal is to provide educators with practical strategies to foster a more engaging and dynamic classroom experience for all learners.

1.1. Strategy

The intervention in this study focuses on implementing alternative-response cards to enhance pupil engagement in the Grade 4 classroom. Alternative response cards offer various benefits such as enhancing language skills, boosting storytelling abilities, improving memory and problem-solving, and expanding vocabulary. Beyond cognitive gains, these cards also help build self-confidence, foster practical communication skills, and stimulate creativity. Alternative response cards serve as a playful learning tool, with the added advantages of being fun, simple, and visually appealing due to their colorful and pictorial design. Thus, students are very eager to begin using alternative response cards because they find them enjoyable (Harisanty et al., 2020).

Flashcards have long been recognized as practical tools for enhancing vocabulary acquisition, especially among young learners, while also increasing student engagement in the classroom. These significantly boosted students' vocabulary retention, engagement, and motivation, as reflected in high scores on effectiveness evaluations and positive feedback from both teachers and students. Educators praised the materials for their practicality and ease of use in the classroom, while students responded enthusiastically to the flashcards' visual appeal and interactive features. These findings emphasize the effectiveness of flashcards as a powerful tool for enhancing vocabulary acquisition and fostering active participation in primary education, offering a practical and engaging strategy to support early language development. (Paldy et al., 2025). Indeed, student engagement is connected to achieving desired learning outcomes (Ab Aziz et al., 2022)

Alternative Response Cards serve as an effective strategy to enhance engagement among Grade 4 pupils by actively involving every student in the learning process. This approach helps reduce students' anxiety about participating by providing a low-pressure way to express their answers, making even shy or hesitant learners feel included. It fosters a more inclusive and interactive classroom environment where pupils are motivated to pay attention and contribute. Additionally, the strategy provides teachers with immediate insight into students' comprehension, allowing them to adjust instruction quickly and address any misunderstandings. The tactile and visual nature of the cards also adds an enjoyable, dynamic element to lessons, which helps sustain interest and focus. Ultimately, using Alternative Response Cards encourages active participation, improves student confidence, and supports more effective teaching and learning in the Grade 4 classroom.

1.2. Action Research Questions

This action research aimed to enhance the engagement of Grade 4 pupils. Specifically, this study sought to answer the following questions:

- What is the level of pupils' engagement in the Grade 4 classroom before implementing alternative response cards based on rubric assessment?
- What is the level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on rubric assessment?
- What is the level of pupils' engagement in the Grade 4 classroom before implementing alternative response cards based on checklist observation?
- What is the level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on checklist observation?
- Is there a significant difference in the level of pupil engagement in the Grade 4 classroom before and after implementing the alternative response card based on rubric scores?
- Is there a significant difference in the level of pupil engagement in the Grade 4 classroom before and after the implementation of the alternative response card based on checklist observation results?

2. Action Research Method

2.1. Research Design

The study employed a classroom-based action research design, which is a reflective and practical approach aimed at improving teaching practices within a specific classroom setting. Action research emerges from a commitment to alter practices and gain deeper insight into the reasons and processes behind observed outcomes. While relatively flexible in design, it must still satisfy a few essential criteria in both planning and execution to be considered sound research (Mac Naughton, 2020). By using alternative response cards, the study seeks to improve pupil engagement, with the action research process enabling continuous evaluation and refinement of the intervention. This design is appropriate as it directly supports the improvement of teaching practices and student outcomes in a real classroom environment.

2.2. Setting

The study was conducted in a public elementary school located in Misamis Occidental, offering education from kindergarten to Grade 6. The school provides a comprehensive basic education curriculum that emphasizes literacy, numeracy, and foundational subjects, alongside programs in arts, sports, and values education. The institution is committed to fostering academic growth and character development, creating an environment where students can thrive both in and out of the classroom. This research specifically focused on the Grade 4 pupils, a group that is transitioning to more advanced learning and critical thinking, making engagement in classroom activities essential for their academic success.

2.3. Participants

The respondents of the study consisted of 39 Grade 4 pupils from a single section that the researcher was teaching, selected through purposive sampling. The selection of the respondents was based on the following criteria: students who were enrolled as Grade 4 students for the school year 2024–2025, and those who demonstrated a willingness to participate in the study by showing interest and cooperation during the introduction of the alternative response cards. The researcher ensured that these criteria were met before conducting the survey. Other sections of the same grade level were not included in the study.

3. Instruments

The researcher used the following instruments in this study:

3.1. Class Participation Rubric

The researcher used a teacher-assessed rubric specifically developed to measure the level of pupil engagement in Grade 4 classrooms before and after the implementation of alternative response cards. The rubric consisted of five key criteria: Active Participation, Comprehension, Accuracy of Responses, Engagement and Enthusiasm, and Use of Response Cards. Each criterion was rated on a 4-point scale, with four as the highest and one as the lowest. The Active Participation criterion was given double weight to highlight its significance in measuring engagement. This rubric was employed

consistently during both the pre-implementation and post-implementation phases to ensure reliable assessment of the pupils' behavioral and academic engagement. The total scores derived from the rubric provided a holistic overview of each learner's level of involvement throughout the study. To interpret the learners' performance and track the impact of the intervention, the researcher used the hypothetical mean range and its adjectival equivalents based on DepEd Order No. 8, s. 2015:

Scale	Interpretation
17-20	Outstanding
16	Very Satisfactory
14-15	Satisfactory
12-13	Fairly Satisfactory
1-11	Did Not Meet expectations

3.2. Lesson Participation Checklist

The researcher utilized a self-made questionnaire composed of 30 items designed to assess pupils' level of engagement before and after the implementation of alternative response cards. The questionnaire included statements related to pupils' attitudes, feelings, and behaviors toward class participation and the use of alternative response cards. Each item was rated on a 5-point Likert scale, with the following values: 5 – Strongly Agree, 4 – Agree, 3 – Neutral, 2 – Disagree, and 1 – Strongly Disagree. To determine the level of pupils' participation in class activities, the study used the following continuum:

Responses	Mean Range	Interpretation
5 – Always	4.50 – 5.00	Excellent
4 – Often	3.50 – 4.49	Very Good
3 – Sometimes	2.50 – 3.49	Good
2 – Rarely	1.50 – 2.49	Fair
1 - Never	1.00 – 1.49	Needs Improvement

3.3. Lesson Plan

A detailed lesson plan was used to ensure consistent and structured teaching during the intervention period. The lesson plan incorporated the use of alternative response cards to enhance student engagement. It included specific objectives, materials, and activities aimed at fostering greater interaction and participation from the students. The lesson plan also guided the researcher in systematically implementing the intervention while ensuring alignment with curriculum standards.

4. Data Gathering Methods

4.1. Pre-Implementation Phase

Before the intervention, the researcher conducted the pre-implementation phase to establish a baseline of pupil engagement. An orientation session was held with the participating Grade 4 pupils to explain the purpose of the study, the procedures involved, and how the alternative response cards would be used during the intervention. The session aimed to ensure that pupils fully understood their role in the study. To comply with ethical standards, the researcher also secured informed consent from parents or guardians and assent from the pupils themselves. This process ensured that all participants voluntarily agreed to take part in the research with full awareness of its scope and purpose. During this phase, the Class Participation Rubric was used by the cooperating teacher to objectively assess the pupils' level of engagement during regular classroom activities, before the use of the intervention. The rubric evaluated five key indicators: Active Participation, Comprehension, Accuracy of Responses, Engagement and Enthusiasm, and Use of Response Cards (not yet introduced at this point). The resulting scores served as baseline data for later comparison with post-intervention results.

4.2. Implementation Phase

In the implementation phase, the researcher introduced the use of alternative response cards as a strategy to enhance pupil engagement in classroom participation. Pupils were trained on how to use the cards appropriately to express their answers, ideas, or choices during lessons. These cards were incorporated into various classroom tasks, with consistent guidance from the cooperating teacher. The response cards were used regularly in lessons to encourage active and inclusive participation, especially from pupils who were usually hesitant to speak out loud. The researcher closely monitored the classroom to ensure proper integration and consistent use of the response cards across the intervention period.

4.3. Post-Implementation Phase

Following the completion of the intervention, the post-implementation phase involved the reassessment of pupil engagement using the Class Participation Rubric. The cooperating teacher used the same rubric from the pretest to evaluate any changes in each pupil's participation. In addition, the Lesson Participation Checklist—a 30-item self-report questionnaire—was administered to the pupils. This checklist aimed to capture their reflections and perceptions regarding their participation and experiences with the use of alternative response cards. Pupils rated their agreement with each statement using a 5-point Likert scale.

4.4. Ethical Considerations

Ethical standards were rigorously upheld throughout this study. Before data collection, participants provided informed consent after being fully briefed on the research objectives, their rights, and the potential benefits of their involvement. They were also informed about the Data Privacy Act of 2012, underscoring our commitment to safeguarding personal information and handling sensitive data responsibly. At every stage, researchers communicated transparently, assuring participants that their responses would remain confidential and their identities anonymous.

4.5. Data Analysis

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

4.5.1. Frequency and Percentage Distribution

These were used to summarize the responses in the Lesson Participation Checklist, allowing the researcher to describe how many pupils expressed specific levels of agreement with the statements related to their engagement and experience with the intervention.

4.5.2. Descriptive Statistics

Mean and standard deviation were computed to determine the overall level of pupil engagement before and after the implementation of alternative response cards, based on the results of the Class Participation Rubric and the Lesson Participation Checklist. This helped identify the central tendency and variability in the pupils' participation scores.

4.5.3. Paired Sample t-Test

This statistical test was used to determine whether there was a significant difference in the pupils' engagement levels before and after the intervention, based on the scores from the Class Participation Rubric. The test compared the pretest and post-test means to assess the effectiveness of the alternative response cards.

5. Results and Discussions

Significant improvements in pupil engagement were achieved by incorporating alternative response cards into Grade 4 classroom instruction. This interactive approach encouraged all learners to participate actively, increased their focus on lesson content, and boosted motivation to contribute during discussions. Careful analysis of pre- and post-intervention engagement data provided valuable feedback to educators, enabling them to fine-tune their teaching methods for greater inclusivity and effectiveness. The following tables illustrate the impact of this strategy on pupil engagement before and after its implementation.

5.1. Level of Pupils' Engagement in Grade 4 Classroom Before Implementing Alternative Response Cards Based on Rubric Assessment

Table 1 presents the level of pupils' engagement in the Grade 4 classroom before implementing Alternative Response Cards based on rubric assessment. Based on the provided rubric scale, this places the overall performance of the Grade 4 pupils in the "Fairly Satisfactory" category ($M = 12.39$, $SD = 3.18$).

The data indicate that prior to the implementation of Alternative Response Cards, the general level of engagement among the Grade 4 pupils was only moderately satisfactory. The overall mean score (M) falls within the "Fairly Satisfactory" range, suggesting that the class, as a whole, demonstrated a limited degree of active participation and interest. The standard deviation reveals a considerable variability in engagement levels across the classroom, indicating that while some students exhibited higher engagement, a significant portion displayed lower levels, pulling the average down to just "Fairly Satisfactory." ($M = 12.39$, $SD = 3.18$). This overall performance level suggests a need for instructional strategies that can more effectively capture the interest and promote active involvement for a broader range of learners in the Grade 4 classroom. This emphasizes the importance of exploring and implementing more engaging approaches to increase the active participation and motivation of all pupils.

To address this, schools and teachers must explore engagement-focused interventions. These could include non-verbal response tools, peer interactions, and motivation-building strategies that encourage shy or hesitant learners to participate. Fostering intrinsic motivation primarily through student-centered approaches and relevance to personal interests can significantly improve participation and learning outcomes (Tadjibaeva, 2025). Additionally, student-centered learning is an educational approach that empowers students to direct their own learning, fostering deep understanding and enhancing overall student performance. As the cornerstone of the 2013 Curriculum, it calls for a shift in mindset toward refining instructional practices. Learning—defined as the collaborative activities between teachers and students—is most effective when students, rather than instructors, are at the heart of the process. Also, lessons should be engaging and enjoyable. In today's digital age, educators must embrace new paradigms, leveraging technology and the internet to enrich and diversify learning experiences (Purnamasari et al., 2020).

The implications of these findings are clear: without more dynamic and inclusive instructional techniques, a sizable portion of Grade 4 pupils will continue to engage only moderately with classroom tasks. Introducing tools like Alternative Response Cards can help bridge that gap by offering all students—especially those less inclined to speak up—a low-stakes way to participate and stay focused. For teachers, this means rethinking traditional whole-class questioning and embedding interactive response methods into daily lessons. School leaders and curriculum developers should prioritize professional development on engagement-boosting strategies and allocate resources for simple, cost-effective tools that foster active learning. Finally, involving parents through at-home activities that mirror classroom response routines can reinforce engagement habits, creating a cohesive support system that sustains pupil motivation and participation both in and out of school.

Table 1 Level of Pupils' Engagement in Grade 4 Classroom Before Implementing Alternative Response Cards Based on Rubric Assessment

Engagement Level	Frequency	Percentage	M	SD
Outstanding	7	17.95	17.43	0.79
Very Satisfactory	3	7.69	16.00	0.00
Satisfactory	2	5.13	14.50	0.71
Fairly Satisfactory	8	20.51	12.50	0.54
Did Not Meet Expectations	19	48.72	9.68	0.89
Overall Performance	39	100.00	12.39	3.18

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

5.2. Level of Pupils' Engagement in Grade 4 Classroom After Implementing Alternative Response Cards Based on Rubric Assessment

Table 2 presents the level of pupils' engagement in the grade 4 classroom after implementing alternative response cards based on the rubric assessment. The overall performance of the Grade 4 pupils was "Outstanding" ($M = 17.54$, $SD = 1.91$). The data indicate that after the implementation of Alternative Response Cards, the general level of engagement among the Grade 4 pupils significantly improved to an "Outstanding" level.

The mean score (M) clearly falls within the highest engagement category, suggesting that the class, as a whole, demonstrated a high degree of active participation and interest following the intervention. The standard deviation (SD) reveals a relatively small variability in engagement levels across the classroom at this higher level of performance, indicating that the positive impact of the Alternative Response Cards was widespread, with most students exhibiting strong engagement. (M = 17.54, SD = 1.91). This notable shift towards "Outstanding" overall engagement underscores the effectiveness of the implemented strategy in capturing the interest and promoting active involvement for a large majority of learners in the Grade 4 classroom within the local educational context.

Engaging learners in a reflective and structured approach to participation enhances self-efficacy and academic outcomes (Chung et al. 2021). Moreover, providing alternative methods for participation is aligned with principles of differentiated instruction, which emphasize the importance of meeting learners' individual needs and preferences. Given the success of the intervention, it is recommended that teachers continue to integrate response cards into regular lessons, especially in subjects where pupil engagement is typically low. To sustain the positive trend, recognition programs for high-performing pupils and peer-support strategies for those still improving could be implemented. Peer mentoring not only improves academic performance but also builds social bonds and confidence, which are key to long-term engagement (Graham et al., 2022). Teaching cards promote sustained learning by reinforcing key concepts and supporting long-term retention (Kovács et al., 2022).

Table 2 Level of Pupils' Engagement in Grade 4 Classroom After Implementing Alternative Response Cards Based on Rubric Assessment

Proficiency Level	Frequency	Percentage	M	SD
Outstanding	27	69.23	14.71	0.48
Very Satisfactory	5	12.82	16.00	0.00
Satisfactory	7	17.95	18.56	1.25
Overall Performance	39	100.00	17.54	1.91

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

These findings imply that Alternative Response Cards can dramatically elevate pupil engagement across diverse learner profiles. By offering a low-risk, visually supported way to participate, this strategy not only boosts immediate involvement but also nurtures self-confidence and sustained interest in classroom activities. Teachers should leverage response cards routinely, especially in lessons prone to passive learning, to maintain high engagement levels. School leaders and curriculum designers ought to embed interactive response tools within lesson frameworks and provide targeted training so that all educators feel equipped to implement them effectively. Additionally, pairing response card use with peer-mentoring schemes and recognition initiatives can reinforce positive participation habits and foster a collaborative classroom culture. Finally, extending this approach into subjects traditionally associated with low engagement will help ensure that the benefits of active learning and long-term knowledge retention are realized school-wide.

5.3. Level of Pupils' Engagement in the Grade 4 Classroom Before Implementing Alternative Response Cards Based on Checklist Observation

Table 3 presents the level of pupils' engagement in the grade 4 classroom before implementing alternative response cards based on checklist observation. The overall performance of the Grade 4 pupils is in the "Low" category (M = 2.42, SD = 0.37). The data indicate that prior to the implementation of Alternative Response Cards, the general level of engagement among the Grade 4 pupils was "Low" as observed through a checklist. The mean score (M) clearly falls within the "Low" engagement category, suggesting that the class, as a whole, demonstrated limited active participation and interest based on the checklist criteria. The standard deviation (SD) reveals a relatively small variability in engagement levels across the classroom at this lower level of performance, indicating that the lack of engagement was relatively consistent among the pupils (M = 2.42, SD = 0.37). This "Low" overall engagement underscores a significant need for a more effective strategy to foster active involvement and interest among the learners in the Grade 4 classroom within the local educational context.

There are numerous effective ways to teach, and identifying an approach that suits an individual's personality and showcases their strengths requires both practice and reflection. This process also benefits from collaboration with colleagues who are actively engaged in developing their pedagogical skills. For educators who may not have a naturally charismatic lecturing style, techniques that foster peer-to-peer interaction among students often prove to be more

effective than those that center the attention on the teacher (Barkin, 2020). In addition, students' perception of teacher boredom was found to indirectly affect their learning motivation through their own experience of boredom. Specifically, when students perceived their teacher as bored, it heightened their own sense of boredom, which subsequently diminished their motivation to learn. These findings suggest that a teacher's boredom, whether actual or perceived, can negatively impact students' classroom engagement and learning outcomes. This highlights the significance of examining the connection between teacher boredom, students' perception of it, student boredom, and overall learning motivation (Tam et al., 2020).

These observations imply that, in the absence of targeted engagement tools, Grade 4 pupils exhibit uniformly low participation and interest, which can significantly hinder learning progress. To counteract this, educators should adopt strategies that shift the focus away from teacher-centered delivery toward activities that actively involve every student, such as Alternative Response Cards, peer-to-peer discussions, and collaborative tasks. Professional development should also address the impact of teacher demeanor on student motivation, equipping teachers with techniques to project enthusiasm and manage classroom energy. By fostering an interactive atmosphere and monitoring engagement through simple observational tools, schools can identify disengaged learners early and apply responsive interventions. Ultimately, creating a classroom culture that values student voice and maintains high levels of teacher engagement is essential for transforming consistently low participation into sustained, active learning.

Table 3 Level of Pupils' Engagement in Grade 4 Classroom Before Implementing Alternative Response Cards Based on Checklist Observation

Level of Engagement	M	SD
Low	2.42	0.37

Note Scale: 4.20-5.00 (Very High); 3.40-4.19 (High); 2.60-3.39 (Moderate High); 1.80-2.59 (Low); 1.00-1.79 (Very Low)

5.4. Level of Pupils' Engagement in the Grade 4 Classroom After Implementing Alternative Response Cards Based on Checklist Observation

Table 4 presents the level of pupils' engagement in the grade 4 classroom after implementing alternative response cards based on checklist observation. The overall performance of the Grade 4 pupils is in the "High" category (M = 4.09, SD = 1.14). The data indicate that after the implementation of Alternative Response Cards, the general level of engagement among the Grade 4 pupils significantly improved to a "High" level as observed through a checklist.

The mean score (M) clearly falls within the "High" engagement category, suggesting that the class, as a whole, demonstrated a high degree of active participation and interest based on the checklist criteria. The standard deviation (SD) reveals a moderate variability in engagement levels across the classroom at this higher level of performance, indicating that while most pupils exhibited high engagement, there was still some range in their levels (M = 4.09, SD = 1.14). This notable shift towards "High" overall engagement underscores the effectiveness of the implemented strategy in capturing the interest and promoting active involvement for a large majority of learners in the Grade 4 classroom.

Students from various academic disciplines expressed a preference for a combination of teacher-centered and student-centered teaching methods. These included lectures that involve student interaction, hands-on demonstrations and practice, lectures supported by PowerPoint presentations, open classroom discussions, guest speaker sessions, and the incorporation of games into lessons (Murphy, 2021). Therefore, active student involvement is critical for the effective delivery of instruction and the overall learning experience (Ullah & Anwar, 2020). Thus, a card-based gamification strategy streamlines the selection and use of instructional tools to enhance teaching and learning (Mavroudi et al., 2020).

The implications depict that using Alternative Response Cards as a gamified, card-driven technique can dramatically increase student engagement by giving all learners a simple, low-pressure way to join in. When these cards become part of everyday lessons, they help maintain steady participation, an essential element for effective teaching and deeper learning. Educators should make response cards a regular feature across different subjects, especially where attention often wanes. Targeted professional development can equip teachers with the know-how to create and lead these interactive card activities, while curriculum designers should build them into standard teaching plans. Pairing response cards with collaborative tasks and reward systems can further strengthen positive participation habits. In this way, straightforward gamified tools like Alternative Response Cards can help establish consistently high engagement as the classroom norm.

Table 4 Level of Pupils' Engagement in Grade 4 Classroom After Implementing Alternative Response Cards Based on Checklist Observation

Level of Engagement	M	SD
High	4.09	1.14

Note Scale: 4.20-5.00 (Very High); 3.40-4.19 (High); 2.60-3.39 (Moderate High); 1.80-2.5 (Low); 1.00-1.79 (Very Low)

5.5. Significant Difference in the Level of Pupil Engagement in the Grade 4 Classroom Before and After Implementing the Alternative Response Card Based on Rubric Scores

Table 5 presents the analysis of the significant difference in the level of pupil engagement in the Grade 4 Classroom before and after the Implementation of the Alternative Response Card based on the Rubric Assessment. The data includes mean (M), standard deviation (S.D.), t-value, p-value, and the decision regarding the null hypothesis (Ho). The results indicate a "highly significant" difference in the level of pupil engagement before and after the implementation of the Alternative Response Card. Specifically, the engagement level before the implementation (M = 12.39, SD = 3.18) compared to after the implementation (M = 17.54, SD = 1.90) shows a substantial improvement (t = 17.33, p = 0.00). This p-value is less than 0.01, indicating a statistically highly significant difference.

The findings strongly suggest that the Alternative Response Card positively impacts the level of pupil engagement in the Grade 4 classroom. The considerable increase in the mean engagement score, moving from the "Fairly Satisfactory" category to the "Outstanding" category, demonstrates that this instructional strategy significantly enhances pupil participation and interest as measured by the rubric. The extremely low p-value provides compelling statistical evidence to reject the null hypothesis, confirming that the observed improvement is not due to chance but is a direct and substantial effect of the Alternative Response Card intervention. The shift towards a higher mean and a smaller standard deviation post-intervention (indicating more consistent high engagement) further underscores the effectiveness of the technique in elevating the overall engagement of the learners. In contrast, no non-significant variables are present, as the analysis clearly indicates a highly significant difference resulting from the intervention (p < 0.01).

A persistent challenge for educators is capturing and maintaining students' interest to facilitate meaningful learning. One effective strategy to address this is by incorporating games into instruction (Plump & Meisel, 2020). To foster increased motivation and engagement among learners, the instructional activities were enriched not only through adaptive content but also by integrating game mechanics such as point systems and reward structures. Additionally, the lessons accommodated two distinct gaming modes: adventure and competitive, offering diverse motivational pathways for student participation (Borotić & Jaguš, 2022, October).

The implications of the findings show that the Alternative Response Cards can transform passive learners into active participants by valuing every student's input. Teachers should integrate these cards into daily lessons, incorporating quick game elements to sustain student motivation. Professional development and curriculum guides must support educators in designing and implementing card-based activities. Finally, school leaders can reinforce engagement gains by celebrating active participation and encouraging peer support.

Table 5 Significant Difference in the Level of Pupil Engagement in the Grade 4 Classroom Before and After Implementing the Alternative Response Card Based on Rubric Scores

Variables	M	SD	t-value	p-value	Decision
Before the Implementation of the Alternative Response Card	12.39	3.18	17.33	0.00	Reject Ho
After the Implementation of the Alternative Response Card	17.54	1.90			

Ho: There is no significant difference in the level of pupil engagement in grade 4 classroom before and after the implementation of the alternative response card
Note: Probability Value Scale: **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not Significant)

5.6. Significant Difference in the Level of Pupil Engagement in the Grade 4 Classroom Before and After Implementing the Alternative Response Card Based on Checklist Observation Results

Table 6 presents the analysis of the significant difference in the level of pupil engagement in the Grade 4 Classroom before and after the Implementation of the Alternative Response Card based on the Checklist Observation. The data includes mean (M), standard deviation (S.D.), t-value, p-value, and the decision regarding the null hypothesis (Ho).

The results indicate a "highly significant" difference in the level of pupil engagement before and after the implementation of the Alternative Response Card. Specifically, the engagement level before the implementation (M = 2.42, SD = 0.37) compared to after the implementation (M = 4.09, SD = 1.14) shows a substantial improvement (t = 24.91, p = 0.00). This p-value is less than 0.01, indicating a statistically highly significant difference.

The findings strongly suggest that the Alternative Response Card positively impacts the level of pupil engagement in the Grade 4 classroom, as observed through the checklist. The considerable increase in the mean engagement score, moving from the "Low" category to the "High" category, demonstrates that this instructional strategy significantly enhances pupil participation and interest based on the checklist criteria. The extremely low p-value provides compelling statistical evidence to reject the null hypothesis, confirming that the observed improvement is not due to chance but is a direct and substantial effect of the Alternative Response Card intervention. The shift towards a higher mean, despite a slightly larger standard deviation post-intervention (potentially reflecting a wider range within the "High" engagement category), underscores the effectiveness of the technique in elevating the overall engagement of the learners as assessed by the checklist. In contrast, no non-significant variables are present, as the analysis clearly indicates a highly significant difference resulting from the intervention (p < 0.01).

Educational games, such as card-based activities, have gained recognition as practical teaching tools because they merge proven learning gains with an engaging, enjoyable atmosphere. Even though there's a growing array of educational games covering a wide range of subjects (Lhardy et al., 2022). Consequently, active student involvement is essential to the effectiveness of classroom teaching and learning, fostering deeper comprehension, collaboration among peers, and long-term retention of material. It also boosts motivation, encourages critical thinking, and helps teachers gauge understanding in real time. By actively engaging, learners take ownership of their education, participate more confidently, and contribute to a supportive, dynamic classroom environment where diverse perspectives enrich the learning experience (Watson & Berry, 2022).

Table 6 Significant Difference in the Level of Pupil Engagement in the Grade 4 Classroom Before and After Implementing the Alternative Response Card Based on Checklist Observation Results

Variables	M	SD	t-value	p-value	Decision
Before the Implementation of the Alternative Response Card Based on Checklist Observation	2.42	0.37	24.91	0.00	Reject Ho
After the Implementation of the Alternative Response Card Based on Checklist Observation	4.09	1.14			

Ho: There is no significant difference in the level of pupil engagement in the Grade 4 classroom before and after implementing the alternative response card based on checklist observation results; Note: Probability Value Scale: **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not Significant)

6. Summary and Findings

6.1. Summary

Pupil engagement is a key factor in creating a practical and interactive learning environment, especially among younger learners who may struggle to maintain focus during traditional classroom discussions. This study aimed to determine the effectiveness of using alternative response cards in enhancing pupil engagement among Grade 4 students during S.Y. 2023–2024 in a public institution in the city of Ozamiz. The study employed a classroom-based action research design and involved 39 Grade 4 pupils selected through purposive sampling. Research-made rubric and checklist were used to gather data. The data was interpreted using statistical tools. This study sought to answer the following questions: 1) What is the level of pupils' engagement in the Grade 4 classroom before implementing alternative response cards based on rubric assessment? 2) What is the level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on rubric assessment? 3) What is the level of pupils' engagement in

the Grade 4 classroom before implementing alternative response cards based on checklist observation? 4) What is the level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on checklist observation? 5) Is there a significant difference in the level of pupil engagement in the Grade 4 classroom before and after implementing the alternative response card based on rubric scores? 6) Is there a significant difference in the level of pupil engagement in the Grade 4 classroom before and after the implementation of the alternative response card based on checklist observation results?

6.2. Findings

The following were the key findings of the study:

- The level of pupils' engagement in the Grade 4 classroom before implementing alternative response cards based on rubric assessment was satisfactory.
- The level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on rubric assessment was outstanding.
- The level of pupils' engagement in the Grade 4 classroom before implementing alternative response cards based on checklist observation was low.
- The level of pupils' engagement in the Grade 4 classroom after implementing an alternative response card based on checklist observation was high.
- There is a highly significant difference in the level of pupil engagement in the Grade 4 classroom before and after implementing the alternative response card based on rubric scores.
- There is a highly significant difference in the level of pupil engagement in the Grade 4 classroom before and after the implementation of the alternative response card based on checklist observation results.

7. Conclusions

Based on the findings, the following conclusions are drawn:

- Traditional, teacher-centered methods resulted in only reasonably satisfactory levels of pupil engagement prior to the intervention, as shown by the rubric assessment.
- The implementation of Alternative Response Cards significantly enhanced pupil engagement, raising it to an outstanding level based on rubric results.
- Before the intervention, pupil engagement was low according to the checklist observation, indicating limited active participation.
- After using Alternative Response Cards, engagement improved to a high level based on checklist observations, demonstrating increased involvement and interest.
- A highly significant difference in engagement levels before and after the intervention was observed using rubric scores, confirming the strategy's effectiveness.
- Checklist observation data also revealed a highly significant increase in engagement post-intervention, reinforcing the positive impact of the Alternative Response Card.

Recommendations

- Teachers may move away from purely traditional, teacher-centered methods and adopt more interactive, student-centered strategies like Alternative Response Cards to foster greater engagement.
- Teachers may consider integrating Alternative Response Cards as a regular classroom tool to promote active participation and immediate feedback during lessons.
- Students may take full advantage of gamified strategies such as response cards to enhance their learning experience, develop confidence, and stay engaged in lessons.
- Students may respond actively, even non-verbally, using response cards, which provide equal opportunities for everyone to be involved and heard.
- School administrators may provide training and resources for teachers to effectively implement interactive tools like Alternative Response Cards and support a shift towards more engaging instructional methods.
- Curriculum planners may include interactive and gamified teaching approaches like response cards in instructional guidelines to enhance pupil engagement and motivation across subjects.
- Future researchers may explore the long-term effects of Alternative Response Cards on pupil performance and engagement across various grade levels and subject areas to broaden the evidence base.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Statement of informed consent

Informed consent was obtained from all individual participants involved in the study.

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