

The Repercussion of Technology-Driven Classroom Organization for Student Engagement

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Abstract: Classroom organization plays a vital role in improving student engagement and academic performance. It involves strategies and techniques teachers use to create a learning-conducive environment by maintaining order, minimizing disruptions, and fostering student engagement. This study determined the implications of technology-driven classroom organization practices of public elementary teachers on the engagement of the Grades 4-6 pupils at Binaliw Integrated School for school year 2025-2026 which served as the basis for developing a classroom organization approach that incorporates technology to improve student engagement. The study used a quasi-experimental research design to compare naturally occurring groups without random assignment, allowing for the analysis of differences in student engagement levels and the degree of technology-driven by teachers with two non-randomized groups. The data were collected through a survey questionnaire. The results of the study revealed that both utilization of technology and traditional classroom organization strategies got high levels of student engagement yet there was a slight difference of the weighted mean, technology-driven approach got higher mean which was 4.25 than the traditional which was 4.23. However, as to testing the null hypothesis, an independent samples t-test revealed no significant difference between the two groups. Both demonstrated a very high level of implementation in their respective classroom organization approaches, and were effective in engaging the learners in daily lessons. Meanwhile, teachers perceived themselves to have a high level of technology integration. It further revealed that teachers showed a strong and consistent use of technology in establishing classroom routines and setting expectations. Thus, the researcher developed the SMARTT Classroom Management Approach, which is intended to help teachers to be more effective in enhancing students' engagement and also serves as a guide and basis for the teachers in balancing both conventional and modern strategies to enhance classroom engagement and effectiveness.

Keywords: Classroom Management, Technology Integration, Student Engagement, Quasi-Experimental Design, Elementary Pupils, SMARTT Approach.

CHAPTER 1

INTRODUCTION

Rationale

One of the most important aspect in improving student engagement and academic performance was implementing an effective classroom organization. For example, setting clear classroom routines and maintaining order and discipline. This will make the environment becomes more organized and supportive of learning. It also helps students to be motivated which result to fewer behavioral problems (Haydon et al., 2021). As the demand for 21st century skills continue to grow, the use of technology in classroom has also become more essential because it can make lessons more interactive

and interesting for students. For example, tools such as gamification and computer-assisted learning can encourage students to participate more actively and stay engaged in the lesson (Kwemoui, 2025). In addition, technology helped teachers present lessons more clearly and efficiently. Furthermore, it also supports a student-centered learning environment wherein learners take a more active role in the learning process. Studies have shown that this approach can improve both student learning outcomes and teaching practices (Irwanto; Sabri et al., 2024).

When teachers use technology and creative teaching strategies, effective classroom organization will be achieved because it help student engagement, motivate students, encourage them to participate actively and improved interaction in the classroom. When students are more involved in the lesson, they become more interested and satisfied with their learning. As a result, this can also lead to a better academic performance. This makes the approach useful and relevant in modern education (Dai et al.; Kansal et al.; Tejas et al., 2023). Although many studies show that technology can improve student engagement, there were still some research gaps in this area, especially in terms of how technology should be effectively integrated into classroom management. Many studies focused only on specific technologies or individual strategies. However, they do not provide a clear and complete approach that teachers can easily follow when managing their classrooms (Hasmirati, H.; Sabri et al., 2024).

This study was significant because it aimed to provide insights that could benefit both educators and school administrators. Understanding the effects of technology-driven classroom organization could help teachers apply more engaging and responsive practices that lead to improved student involvement and academic motivation. Studies showed that integrating technology in the classroom can greatly increase student engagement and motivation. Students usually have positive attitudes toward technology because they see how it helps improve their knowledge, skills, and confidence (Hasmirati, H. 2024; Lestari, L. et al, 2024).

Moreover, the integration of technology in classroom management was a key focus for educational goals, particularly in enhancing teaching effectiveness and student learning outcomes. This approach aligned with the Department of Education's (DepEd) objectives to modernize educational practices and improved student engagement and achievement. In this context, the study aimed to develop the SMARTT Classroom Management Approach, as a strategic output to guide educators in implementing technology-enhanced management practices integrating structured classroom routines, motivation through rewards, active learning, responsive discipline, teacher-student relationship building, and technology integration that foster better student participation and behavior.

Theoretical Background

This study was anchored on four major learning and behavioral theories that support the integration of classroom management strategies and technology to enhance student engagement.

First, the Behaviorist Theory of Learning by B.F. Skinner (1953) explained that behavior was influenced by external stimuli and responses. Positive reinforcement and consistent consequences helped promote desired behaviors, making this theory highly relevant in managing student conduct. According to Skinner (1930 & 1950), learning happened through operant conditioning, which means behavior changes depending on its consequences. When a desirable behavior is rewarded (positive reinforcement), it is more likely to happen again. On the other hand, undesirable behavior can be reduced through negative reinforcement or punishment.

Secondly, the Self-Determination Theory (SDT) by Deci and Ryan (1985) explained that student motivation increased when their psychological needs for autonomy, competence, and relatedness were met. Technology-driven classroom organization could help met students' needs by giving them more control over their tasks (autonomy), more chances to succeed (competence), and better interaction with their classmates and teachers (Deci, E & Ryan, R. 2017).

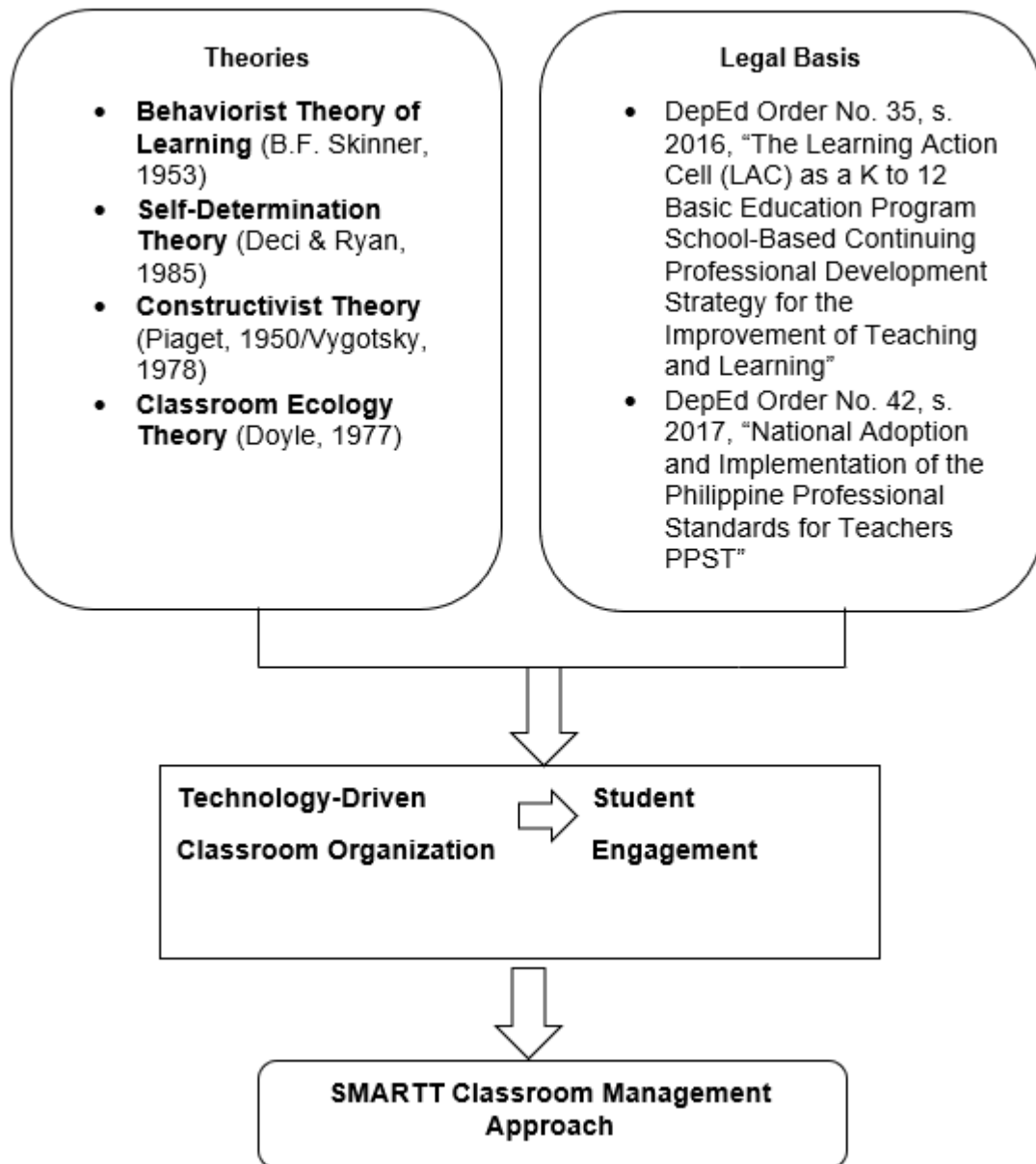


Figure 1. Conceptual Framework

The third supporting theory was Constructivism, introduced by Jean Piaget (1952) and later expanded by Lev Vygotsky (1978), which highlights that student construct knowledge through active engagement with their environment. The use of technology in classroom management could create learning experiences that were interactive, student-centered, and meaningful. In practice, constructivist classrooms were learner-centered, encouraging students to engaged actively with the material and collaborated with peers. Teachers served as facilitators who guided students in discovering and building their own knowledge, instead of just giving information directly (John, P. 2018). Additionally, the integration of Information and Communication Also, combining Information and Communication Technology (ICT) with constructivist teaching has changed how education is done. It allows lessons to be more interactive and tailored to each students' needs (Singh, J. & Singh, S. 2025).

Lastly, Classroom Ecology Theory by Walter Doyle (1977) viewed the classroom as a dynamic system where management involved organizing physical and instructional elements such as time, space, tasks, and behavior. Technology played a role in optimizing classroom routines and interactions whether through digital schedules, behavior tracking apps, or responsive communication tools. Effective classroom organization means that teachers need to plan for the many different and sometimes unpredictable situations in the classroom. This includes being ready for different scenarios

and adjusting plans as needed to keep the class organized and support learning (Rowland, T. et al 2015).

Moreover, this study was also anchored on 2 legal basis that support technology integration in teaching-learning process which significantly foster student engagement.

First, the DepEd Order number 35 series of 2016 which was “The Learning Action Cell (LAC) as a K to 12 Basic Education Program School-Based Continuing Professional Development Strategy for the Improvement of Teaching and Learning”. Learning Action Cells (LACs) were collaborative professional development initiatives in which it improved the skills and capacities of teachers. These sessions were designed to foster a community of learning among educators, enabling them to share knowledge, reflect on practices, and implement innovative strategies. LACs have been shown to significantly enhance teachers' professional competencies. Studies showed that the more Learning Action Cell (LAC) sessions teachers attend, the more their teaching skills and knowledge about teaching improve (Grape, 2024). Teachers shared that LACs helped them grow professionally because they provided a chance to collaborate and continue learning, which is the key to good teaching (Conde et al., 2023).

Next, the Deped Order number 42 series of 2017 which was the "National Adoption and Implementation of the Philippine Professional Standards for Teachers (PPST)" highlighted the importance of managing classrooms well, using technology in delivering the lesson, and creating a positive, engaging learning environment. These national standards was aligned with the goals of this study, which aims to improve classroom organization through technology integration to better support student learning. Domain 2 of the PPST was important because it focused on how teachers manage and organize their classrooms. This helped them create a safe, supportive space where the students could learn effectively and developed positive behavior (Rubio, J. & Saenz, C. 2023).

In addition, using Information and Communication Technology (ICT) was a key part of modern teaching. This study looked at how ICT can be integrated following PPST Domain 4, which focuses on technology in the teaching-learning process. By using ICT effectively, teachers could make their classrooms more dynamic and engaging which helped students understand the lessons better and succeed academically. In 21st century education, ICT integration improved learning efficiency, increasing student motivation and fostering a more inclusive and engaging learning environment. It also helped students developed essential digital literacy skills and prepared them for the demands of a technologically driven world.

THE PROBLEM

Statement of the Problem

This study examined the repercussion of technology-driven classroom organization for student engagement as basis for SMARTT Classroom Organization Approach.

Specifically, this study sought answers to the following questions:

1. What was the level of student engagement in classrooms utilizing technology-driven classroom organization strategies?
2. What was the level of student engagement in classrooms utilizing traditional classroom organization strategies?
3. Was there a significant difference in the level of student engagement between classrooms using technology-driven and traditional classroom organization approaches?
4. What was the level of teachers' implementation of technology-integrated classroom organization strategies?
5. Based on the findings, what classroom management approach could be developed to promote student engagement?

Null Hypothesis

H₀₁: There was no significant difference in the level of student engagement between classrooms using technology-driven and traditional classroom organization approaches.

Significance of the Study

The findings of this research provided essential insights into how technology-driven classroom organization impacts student engagement.

DepEd Administrators. The result of the study gave a valuable data that served as guide in the formulation of policies and programs which aimed to enhance classroom management strategies. Administrators could utilize the result in improving strategies which integrated modern teaching techniques in a classroom setting.

School Principals. The findings on the research assisted school leaders in identifying areas where teachers need further training and support. By understanding the importance of classroom organization, administrators could plan targeted interventions and professional development programs to enhanced instructional effectiveness.

Teachers. This study helped teachers explored their own competencies and skills in the teaching-learning process. The output of the study served as guide to develop professionally ensuring the students' engagement and academic performance.

Parents. The importance of effective classroom management in fostering a positive learning environment highlighted in the study in which parents could acquire a better understanding of how structured routines, motivation, and teacher-student relationships contributed to their children's academic success and overall school experience.

Students. Students tend to be more likely experienced a purposive and engaging learning environment when teachers effectively implemented technology-driven classroom organization. This study contributed to improving student motivation, participation, and overall academic performance by promoting best practices in classroom management.

Researchers. This study allowed the researcher to give valuable understanding to the field of education, specifically in the area of classroom management. It was an avenue to develop critical, analytical and research skills that are beneficial for future academic and professional endeavors.

Future Researchers. This study served as a valuable reference for future endeavor assessing classroom management, teacher competence and student engagement. It could also open new opportunities to study how well technology-integrated classroom organization works in different types of schools.

RESEARCH METHODOLOGY

This section comprises the methodological aspect of the research which includes the following: the research design, flow of the study, research environment, research respondents, research instruments, data gathering procedures, data analysis, and scoring procedures employed in the study.

Design

This study employed the quasi-experimental research design to determine the impact of technology-integrated classroom management towards student engagement. The design was chosen to compare naturally occurring groups without random assignment, allowing for the analysis of differences in student engagement levels and the degree of technology integration by teachers with two non-randomized groups; (1) classrooms implementing technology-integrated classroom management and (2) classrooms employing traditional classroom management. Quasi-experimental studies, which carefully assign participants to groups without using full randomization, can still provide strong and reliable research results, especially in situations where random assignment is not practical (Simon, S. 2025). Classrooms was identified based on the presence or absence of specific indicators of technology integration. Traditional classrooms were defined as those that primarily rely on non-

digital or conventional management techniques without the use of modern ICT tools. Identification of classroom types was validated through teacher surveys and classroom observations.

The data was collected from the students and teachers of Binaliw Integrated School using the survey questionnaires; one administered to students to measure their level of engagement and another to teachers to assess their classroom management practices.

Flow of the Study

The Input – Process - Output (IPO) model of social science research was followed in this study. The part of the IPO system was explained herein as:

Input. This stage included the participants of the study, specifically the experimental group, which referred to classrooms that adopt technology-integrated classroom management, and the control group, which pertained to classrooms that follow traditional classroom management strategies. This also involved the survey instruments designed to assess the perceptions of both teachers and students, as well as the theories and legal bases (DepEd Orders) that guide and support the conduct of the study.

Process. This stage included the sets of activities that were relevant to the collection of the necessary data. The said series of activities included sending out of transmittal letters to the proper authorities; collecting the data through printed questionnaire; employing appropriate statistical analysis in treating the data; interpreting of the data; providing explanation to the observed phenomenon and drawing implications from the results; and making conclusions and recommendations based on the results.

Output. This stage included the organization of ideas based from the result of the study, generalizations, implications and recommendations for the creation of a SMARTT classroom management approach that incorporates technology to improve student engagement.

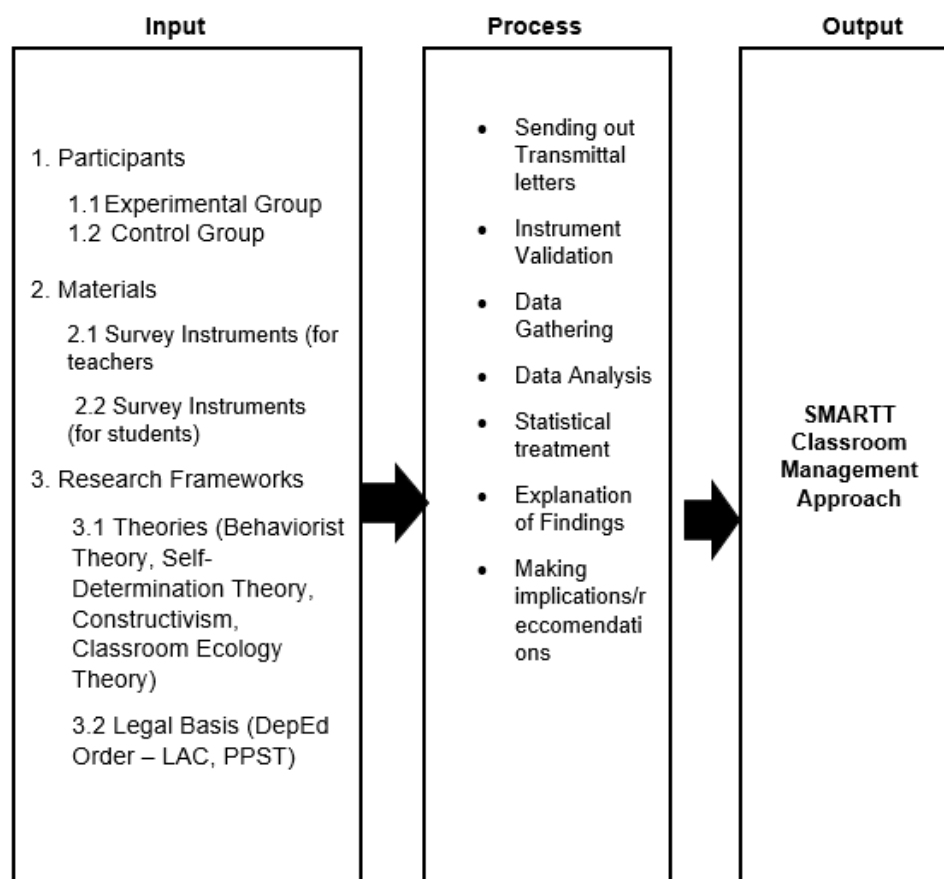


Figure 2. Flow of the Study

Environment

This study was carried out at the Binaliw Integrated School, Binaliw, Danao City, Cebu. This is a public learning institution of the Department of Education (DepEd) under the District 9 of Danao City Division, 5th Congressional District of Cebu province. Danao City is surrounded by several municipalities in Cebu Province. Carmen is located to the North, while Asturias and Balamban lie on the western side. The municipality of Compostela borders the City in the South, and the Camotes Islands are situated to the east. Geographically, Danao City is found in the Northern part of the province but remains relatively near the central area, approximately 33 kilometers from Cebu City, which serves as the provincial capital.

Binaliw Integrated School was composed of multiple buildings with functional classrooms and it comprises kinder to grade 10 which complete elementary and secondary education. The said school is staffed with a total of thirty-five (35) teachers and has been continuously striving to enhance its instructional strategies and classroom management approaches in alignment with its goal of improving student engagement and academic performance. As part of its commitment to professional development, the school has also participated various trainings programs aim to equip teachers with effective strategies to foster a positive learning environment and enhance student engagement.

The study area was purposively selected by the researcher since she is one of the faculty members of the said school and thus, there would be ease in the collection of data which needs to be considered.



Figure 3. Location Map of the Research Environment

Respondents

The participants of this study were the grade 4-6 teachers and learners of Binaliw Integrated School, District 9 of Danao City Division. The study involved 12 teachers teaching grade 4 to 6 and 200 students. The students were categorized into two groups; 100 in the Experimental group and 100 students in the Control group.

This study focused on Grade 4 to 6 teachers because these years were a transition period from lower to upper elementary. Teachers at these levels often handled multiple subjects, larger classes, and dealing students with diverse needs. This made the classroom management strategies and the integration of technology more impactful. Choosing this group provided valuable data into how different management styles particularly the use of technology, affect student engagement in a more challenging learning environment.

Table 1. Distribution of Respondents

| Group | Respondents | Number of Respondents |
|---------------------------|--------------------|------------------------------|
| Experimental Group | Students | 100 |
| Control Group | Students | 100 |
| Total | | 200 Students |

Instruments

This study used two adapted surveys to collect data from the respondents: one for elementary students to measure their level of engagement, and another for elementary teachers to assess how they use technology in classroom management.

For student engagement, the researcher adapted questions from the Elementary Student Engagement Survey (K-5) by Communities in Schools, Inc. (2020). This was a trusted tool for measuring how students perceived their engagement. The original survey was validated by experts in student development and school counseling and was tested in several United States School Districts. Its reliability scores (Cronbach's Alpha) ranged from 0.79 to 0.89, showing good consistency.

The researcher modified some items to focus on the use of technology and classroom management and used a 5-point Likert scale for the responses. The survey was given to grades 4 to 6 students, who could read and answer independently. To make it easier for them to understand, the questions were translated into Cebuano-Bisaya, the language spoken in the area.

To assess teachers' implementation about the extent of technology integration in classroom management, the researcher developed a second questionnaire which was adapted from two validated tools: the Technology Integration Matrix (TIM) and the Technology Integration Self-Efficacy Instrument (TISEI) by Wang, Ertmer, and Newby (2004). These tools have been widely cited and used in multiple educational research studies. Responses to the questionnaire were measured using a five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

Furthermore, the student-questionnaire was pilot tested among 15 pre-test respondents to ensure its clarity and reliability. The questionnaire had a Cronbach's Alpha of 0.85, showing that the items were consistent with each other. Meanwhile, the teacher questionnaire was reviewed by experienced educators to ensure face and content validity. Suggestions regarding clarity and grammar were considered and incorporated to the final version.

Data Gathering Procedures

Pre-data Collection

Before the collection of the necessary data through survey questionnaire, the researcher sent letter to the Schools Division Superintendent (SDS) in Danao City Division asking for a permission to conduct a survey at Binaliw Integrated School, Binaliw, Danao City. When the SDS approved the letter, a separate letter was sent to the Principal of Binaliw Integrated School asking for permission to proceed with the survey having its selected pupils and teachers as participants of the study. The letter includes

information as to the importance of the study and the results of the survey was treated with care and solely for academic purposes only.

Actual Data Collection

Upon the approval and coordination with the school, the researcher briefed the teacher and student respondents regarding the goal of the study, their voluntary participation, and their right to withdraw at any time. The teacher respondents were first given the teacher survey questionnaire to assess their level of implementation on utilizing technology-integrated classroom management strategies. Then, the researcher explained to them that for a week, 6 teachers would conduct technology-driven classroom organization strategies in their classes using a Daily Lesson Plan for technology-driven classroom while the other 6 teachers would use the traditional method of teaching. After the experimentation, student respondents answered the adapted survey (English/Cebuano version), administered in class with the guidance of their classroom adviser. Each respondent completed the survey within 15–20 minutes. The respondents were notified that the information they would disclose could never harm them in any way. The respondents were also informed that there would be no rewards or punishments for their participation and that their participation was totally voluntary in nature.

Post-Data Collection

After the data had been collected, the researcher organized and encoded the responses for statistical treatment. The collected data were examined using statistical tools like the mean, standard deviation, and independent samples t-tests to examine the effects of technology-integrated classroom organization. The results were then interpreted and discussed, used as the basis for the study's conclusion and recommendations.

Statistical Treatment of Data

Before running statistical tests, the researcher checked first whether the data followed a normal distribution. This step was important to decide whether to use parametric or non-parametric methods.

The Shapiro-Wilk Test was used to check normality since it worked well with small to medium sample sizes and was commonly used in educational research.

The results showed that the data were normally distributed. Because of this, parametric tests like the mean and standard deviation were used to describe teacher's technology-driven classroom management practices and students' engagement levels. These statistics helped in summarizing the overall trends and differences in the responses. An independent samples t-test was also used to check if there were significant differences in student engagement based on exposure to technology-driven classroom organization versus traditional management.

This process ensured that the statistical treatment of data was appropriate, accurate, and valid for answering the specific objectives of the study.

Scoring Procedures

The following five - point Likert scale system was used in the adapted questionnaires for teachers' implementation of technology-driven classroom organization and student engagement.

| Scale | Range | Description | Analysis |
|-------|-------------|-------------------|---|
| 5 | 4.20 – 5.00 | Strongly Agree | Very High – The indicator is always observed. |
| 4 | 3.40 – 4.19 | Agree | High- The indicator is often observed. |
| 3 | 2.60 – 3.39 | Neutral | Moderate- The indicator is sometimes observed |
| 2 | 1.80 – 2.59 | Disagree | Low- The indicator is seldom observed. |
| 1 | 1.00 – 1.79 | Strongly Disagree | Very Low- The indicator is never observed. |

DEFINITION OF TERMS

To established a clear understanding of the important terms that were used in the study, their operational definition as they were used in the study was presented in this section.

Classroom Organization- This pertained to the specific strategies used by teachers to maintain order and discipline in the classroom. Operationally, this involved the use of technology in administering the lesson to support motivation, discipline and routine.

Repercussion- In this study, it referred to the effect or influence that technology-driven classroom organization has on the level of student engagement, as perceived and measured through surveys administered to both teachers and students.

Student Engagement- The degree to which students were actively involved, motivated, and interested in classroom activities. This included their emotional connection to school, participation in tasks, and enthusiasm for learning. In this study, it is measured through a student survey with items focusing on behavioral, emotional, and cognitive engagement.

Technology-Driven- The used of digital tools, devices, and educational software to enhance teaching, improved classroom management, and increase student engagement. In this study, it included using digital tools not just for instruction but for managing behavior, encouraging participation, and organizing classroom activities.

Technology-Driven Classroom Organization- Referred to how digital tools and platforms were used such as tablets, computers, projectors, or educational applications by teachers to established classroom routines, reinforce behavior, engage students, and monitor learning. In this study, it is measured through a teacher questionnaire adapted from the Technology Integration Matrix (TIM) and TISEI.

CHAPTER 2

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter covers the results and provides an interpretation and meaning of the data pertaining to the level of student engagement between classrooms utilizing technology-driven and traditional classroom organization strategies, the level of teachers' implementation of technology-driven classroom organization approaches and the results of testing the null hypothesis.

STUDENT ENGAGEMENT

This section presented the data results on the survey pertaining to the level of student engagement between two non-randomized groups: the experimental group, which referred to classrooms utilizing technology-driven classroom organization, and the control group, which pertained to classrooms that follow traditional classroom organization strategies. The data was presented in tabular format and was supported by a discussion and interpretations of the observed phenomenon.

Level of Student Engagement in Technology-Driven Classroom

This sub-section presented the results and discussion of the level of student engagement in the classroom utilizing technology-driven classroom management strategies. The data from descriptive statistics was presented in Table 2 which follows and was being supported by a thorough discussion and implications of the results.

Table 2. Level of Student Engagement in Technology-Driven Classroom

| Indicator | Weighted Mean | Standard Deviation | Description |
|---|---------------|--------------------|----------------|
| 1. I feel like I belong at my school. | 4.51 | 0.69 | Strongly Agree |
| 2. The lessons of my teachers include stories and activities about people like me or my family. | 4.33 | 0.78 | Strongly Agree |
| 3. There is someone I can trust at school that I can talk to when I feel upset | 3.82 | 1.03 | Agree |

| | | | |
|--|------|------|----------------|
| 4. I feel at ease when asking my teachers or other adults at school for help with my schoolwork. | 4.31 | 0.91 | Strongly Agree |
| 5. I have friends at school who care and support me. | 4.52 | 0.73 | Strongly Agree |
| 6. I always talk to or connect with my friends at school. | 4.24 | 0.87 | Strongly Agree |
| 7. My teacher uses technology in a way that helps me pay attention | 4.05 | 1.12 | Agree |
| 8. I can easily follow the rules in class when we use technology for learning. | 3.89 | 1.20 | Agree |
| 9. I enjoy using technology for learning in my class. | 3.94 | 1.13 | Agree |
| 10. I feel that using technology in class helps me learn better and do my assignments easier. | 4.07 | 1.11 | Agree |
| 11. Whenever I can, I join in class activities. | 4.28 | 0.95 | Strongly Agree |
| 12. I set school-related goals and try my best to reach them. | 4.58 | 0.77 | Strongly Agree |
| 13. I work hard to do well in school. | 4.53 | 0.84 | Strongly Agree |
| 14. I make effort into all my classwork and homework. | 4.47 | 0.77 | Strongly Agree |
| 15. I am interested in at least one thing that I am learning in school. | 4.40 | 0.83 | Strongly Agree |

Note. n=100; 1.00-1.79 Strongly Disagree; 1.80-2.59 Disagree, 2.60-3.39 Neutral; 3.40-4.19 Agree; 4.20-5.00 Strongly Agree

Table 2 presented the survey result on the level of student engagement in classrooms utilizing technology-driven classroom organization. The descriptive data from the questionnaire suggested that students generally have a positive perception of their school experience since the result revealed that the respondents “strongly agree” particularly in areas related to belonging, peer relationships, motivation, and academic effort. This also indicates that students feel emotionally and socially connected to their school environment.

Furthermore, they further “agree” on items related to technology that they easily follow rules in class, stay focused, enjoy learning, learn better, and can do assignments more easily when teachers utilized technology in the classroom. According to Kumar, S. (2025), using technology in the classroom can greatly boost student engagement when done correctly. It gave teachers and students flexible tools that make learning easier and more effective. Technology also allows teachers to adjust instruction to meet the unique needs of each student while still supporting the classroom.

The high level of engagement observed among students supports the Self-Determination Theory (Deci & Ryan, 1985) which emphasizes that learners’ motivation increases when autonomy, competence, and relatedness are addressed. Technology provided students with interactive opportunities and immediate feedback, thereby fostering a sense of competence and connectedness with both teachers and peers.

This finding was also aligned with the Constructivist Theory (Piaget,1952; Vygotsky, 1978), which emphasized that learners built their knowledge through active participation and interaction with their peers. In technology-driven classrooms, students were more engaged and motivated because they could explore, collaborate, and interact with learning materials which helped them understand the concepts more deeply. Based on the Classroom Ecology Theory (Doyle, 1977), the results suggested that using technology in class was a helpful tool for the organization of classroom routines, setting

clear expectations, and making transitions smoother. This reduced off-task behavior and gave students more time in focusing their learnings.

Finally, this outcome was supported by the Philippine Professional Standards for Teachers (PPST) under DepEd Order No. 42, s. 2017, which stressed the integration of ICT to enhance the learning environment. Likewise, DepEd Order No. 35, s. 2016 on the Learning Action Cell (LAC) highlighted the importance of professional collaboration in integrating innovative strategies like technology into classroom management to foster learner engagement.

In general, the students in classrooms utilizing technology-driven classroom organization strategies had a mean engagement score of 4.25 (SD = 0.483) which resulted a very high level of student engagement. This result could be interpreted that the learners were engaged when teachers utilized technology in the daily delivery of the lesson. It could arouse their attention and urge them to cooperate in engaging activities that can provide both fun and learning.

Level of Student Engagement in Traditional Classroom

This sub-section presented the results and discussion of the level of student engagement in classroom utilizing traditional classroom management strategies. The data from descriptive statistics was presented in Table 3 that follows and was being supported by a thorough discussion and implications of the results.

Table 3. Level of Student Engagement in Traditional Classroom

| Indicator | Weighted Mean | Standard Deviation | Description |
|--|---------------|--------------------|----------------|
| 1. I feel like I belong at my school. | 4.18 | 0.91 | Agree |
| 2. The lessons of my teachers include stories and activities about people like me or my family. | 4.20 | 1.01 | Strongly Agree |
| 3. There is someone I can trust at school that I can talk to when I feel upset | 4.02 | 0.99 | Agree |
| 4. I feel at ease when asking my teachers or other adults at school for help with my schoolwork. | 4.13 | 1.12 | Agree |
| 5. I have friends at school who care and support me. | 4.32 | 0.99 | Strongly Agree |
| 6. I always talk to or connect with my friends at school. | 4.17 | 1.03 | Agree |
| 7. My teacher uses technology in a way that helps me pay attention | 4.16 | 0.93 | Agree |
| 8. I can easily follow the rules in class when we use technology for learning. | 3.97 | 1.13 | Agree |
| 9. I enjoy using technology for learning in my class. | 4.18 | 0.97 | Agree |
| 10. I feel that using technology in class helps me learn better and do my assignments easier. | 4.12 | 0.97 | Agree |
| 11. Whenever I can, I join in class activities. | 4.33 | 1.12 | Strongly Agree |
| 12. I set school-related goals and try my best to reach them. | 4.58 | 0.74 | Strongly Agree |
| 13. I work hard to do well in school. | 4.47 | 0.86 | Strongly Agree |
| 14. I make effort into all my classwork and homework. | 4.41 | 0.84 | Strongly Agree |
| 15. I am interested in at least one thing that I am learning in school. | 4.16 | 1.10 | Agree |

Table 3 presented the survey result on the level of student engagement in classrooms utilizing traditional classroom management. The descriptive statistics from the current dataset revealed a generally positive perception among students regarding their school experiences since they mostly agree on the items presented. The highest-rated item was “*I set goals related to my schoolwork and try to reach them*” which have a Mean=4.58; SD=0.74. This reflected strong academic motivation, clear expectation, positive acknowledgement and personal initiative. Cummings, J., Martinez, S.; Ormiston, H., & Skiba, R. (2016) explained that positive classroom management strategies such as setting clear expectations, using an appropriate curriculum, giving positive rewards, and building strong teacher-student relationships helped the students to learn more effectively while reducing disruptions.

In this study, items related to effort and interest in learning (items 11, 13,14) also scored high. It showed that many students were engaged and took their academic responsibilities seriously. When students were interested in what they were learning, they paid better attention, remembered information more easily, stayed motivated, and remained engaged in class. Additionally, clear task structures and meaningful interactions further support this process (Hidi, S. & Renninger, K., 2019).

The positive engagement levels under traditional classroom management strategies aligned with the Behaviorist Theory of Learning (Skinner, 1953) suggested that structured routines, reinforcement, and consequences shaped student behavior. Traditional strategies like rule-setting, consistent routines, and clear expectations helped students stay on task and developed positive learning habits.

This also connects with the Classroom Ecology Theory (Doyle, 1977) which viewed classroom management as an organizational system. In traditional classrooms, routines and clear expectations, created stability and predictability helping learners stay consistently engaged in their academic tasks.

Moreover, the findings reflected the principle of Self-Determination Theory (Deci & Ryan, 1985) by showing that even in traditional settings, students’ need for competence and relatedness is satisfied through supportive teacher feedback and peer relationships, both of which are evident in the high scores for goal-setting and motivation.

Anchored on the Philippine Professional Standards for Teachers (DepEd Order No. 42, s. 2017), it was observed that traditional classroom organization practices uphold Domain 2 which underscored the importance of establishing a safe, secure, and supportive environment for learners. Further, DepEd Order No. 35, s. 2016 (LAC) encouraged teachers to continually enhance classroom organization practices, whether traditional or technology-driven, to ensure effective learning experiences.

In general, the results point to a generally motivated and academically engaged student body, which was a strong foundation for learning since it got a mean engagement score of 4.23 (SD = 0.507) which indicated a very high level of engagement. These results suggested that students, regardless of management style, reported similarly high engagement levels. The findings also suggested that traditional classroom management was still effective in maintaining student engagement. By using structured routines, clear expectations, and strong teacher-student relationships, these methods continued to motivate learners and provide a solid foundation for academic success.

DIFFERENCE IN THE LEVEL OF STUDENT ENGAGEMENT BETWEEN CLASSROOMS UTILIZING TECHNOLOGY-DRIVEN AND TRADITIONAL CLASSROOM ORGANIZATION STRATEGIES

This section presented the results and discussion for testing the null hypothesis, which examined whether there was a significant difference in the level of student engagement between classrooms using technology-driven strategies and those using traditional classroom management. An independent samples t-test was used and its result was presented in Table 4 that follows along with a thorough discussion and interpretation of the observed results.

Table 4. Significant Difference in the Level of Student Engagement Between Classrooms Utilizing Technology-driven and Traditional Classroom Organization Strategies

| Independent Samples t-Test | | | | |
|----------------------------|-------------|-----------|-----|-------|
| | | Statistic | df | p |
| Student Engagement | Student's t | -0.370 | 198 | 0.712 |

Note. $H_a \mu_{Control} \neq \mu_{Experimental}$

Table 4 presented the results of the Independent Samples t-Test to test the significant difference between classrooms utilizing technology-driven and traditional classroom organization strategies. The findings revealed no clear difference in engagement between students taught traditionally and those taught using technology. Having a t-value of -0.370 and a p-value of 0.712, the test emphasized that the variation in mean engagement scores between the two instructional methods was not statistically significant. This suggests that, in this sample, the type of instruction—whether traditional or technology-driven- did not make a big difference on how engaged students felt in their learning.

Babadjanova, N. (2020) emphasized that well-organized classrooms were crucial for 21st century learning because they gave students better learning experiences. This means that both traditional and technology-based classroom management can be effective. Both approaches helped students stay engaged in discussions, follow routines, and focus on their tasks.

The finding of no significant difference in student engagement also supported the Classroom Ecology Theory (Doyle, 1977), which highlighted that effective classroom management depends more on organizing time, space, routines, and interactions than on the tools used. Both traditional and technology-driven strategies, created a supportive, structured environment that kept students engaged.

From a theoretical perspective, Behaviorist Theory (Skinner, 1953) helped explain why both traditional and technology-driven approaches led to similar levels of student engagement. Reinforcement whether through verbal praise in traditional classrooms or digital rewards in technology-driven settings equally encouraged positive behaviors and motivated students in comparable ways.

Meanwhile, the Self-Determination Theory (Deci & Ryan, 1985) also supported the idea that both strategies met students' needs for competence, autonomy, and connection. In traditional classrooms, competence and relationships were strengthened through clear routines and teacher feedback, while technology-driven classrooms enhanced autonomy and engagement through interactive tools.

According to the Philippine Professional Standards for Teachers (DepEd Order No. 42, s. 2017), both approaches showed teacher's competence in managing classroom environments and applying suitable strategies. Furthermore, DepEd Order No. 35, s. 2016 (LAC) emphasized that ongoing professional learning helped teachers balance traditional and modern methods to meet the needs of diverse learners.

Overall, both approaches created a structured and supportive environment that encourages responsibility, positive behavior and active engagement.

LEVEL OF TEACHERS' IMPLEMENTATION OF TECHNOLOGY-DRIVEN CLASSROOM ORGANIZATION STRATEGIES

This section presented the results and discussion on the level of teachers' implementation of technology-driven classroom organization strategies. The data from descriptive statistics were presented in Table 5 that followed and were being supported by a thorough discussion and implications of the result.

Table 5. Level of Teachers' Implementation of Technology-Driven Classroom Organization Strategies

| Indicator | Weighted Mean | Standard Deviation | Description |
|--|---------------|--------------------|----------------|
| 1. I use technology to help set up daily classroom routines | 4.83 | 0.39 | Strongly Agree |
| 2. I give digital schedules or reminders for class tasks. | 4.33 | 0.49 | Strongly Agree |
| 3. Technology helps make classroom expectation clear. | 4.83 | 0.39 | Strongly Agree |
| 4. I use technology tools (e.g., ClassDojo, Seesaw) to monitor student behavior. | 3.58 | 0.67 | Agree |
| 5. I give positive feedback using digital platforms. | 4.00 | 0.60 | Agree |
| 6. Technology helps me manage student behavior effectively. | 4.50 | 0.52 | Strongly Agree |
| 7. I use interactive technologies (e.g., videos, quizzes) to motivate learners. | 4.58 | 0.52 | Strongly Agree |
| 8. Technology makes my lessons more engaging. | 4.92 | 0.29 | Strongly Agree |
| 9. Students are more participative when I integrate technology. | 4.67 | 0.49 | Strongly Agree |
| 10. I feel confident using technology to manage my classroom. | 4.50 | 0.67 | Strongly Agree |
| 11. I can troubleshoot common tech-related issues during class. | 3.67 | 0.49 | Agree |
| 12. I am prepared to integrate new technology tools in my teaching routines. | 4.25 | 0.62 | Strongly Agree |

The results from the indicators revealed that teachers showed a strong and consistent use of technology in establishing classroom routines and setting expectations. Almost all teachers reported that using digital tools helped organize and clarify their classrooms. This showed that technology was well integrated into daily routines, helping with smoother transitions, better time management, and clearer communication of expectations. Teachers also noted that technology supports positive feedback and behavior management. Technology-driven classrooms not only improve learning but also helped students developed independence and confidence in guiding their own learning (Da Silva, A. 2023).

Student motivation and engagement emerged as the strongest areas. Teachers overwhelmingly agreed that interactive tools like videos and quizzes—greatly boost student interest and participation. These results suggested that technology made lessons more interactive, enjoyable, and accessible, supporting diverse learners and enhancing overall classroom dynamics.

According to Kumar, M. & Liu, Z. (2019), great teachers helped built great schools. Each teacher had their own way of managing the classroom, and using technology was one approach that makes learning more engaging. It helped students understood the lessons better, collaborate actively, work together, and saw how their learning connects to real life.

The strong use of technology-driven strategies by teachers fits well with the Behaviorist Theory of Learning (Skinner, 1953), as digital tools provided consistent reinforcement that encourages positive student behavior. For example, platforms like Class Dojo and Seesaw let teachers to reward compliance, track behavior, and gave instant feedback, motivating students to follow classroom rules.

In addition, this finding was also supported by the Constructivist Theory (Piaget, 1952; Vygotsky, 1978) which emphasized that students learn best when actively engaged in activities. Using interactive technologies such as videos, quizzes, and simulations, allowed students to explore, collaborate, create knowledge in a learner-centered environment.

From the perspective of the Self-Determination Theory (Deci & Ryan, 1985), technology helped teachers met students' psychological needs. Autonomy was encouraged through independent digital tasks, competence was strengthened through guided practice with ICT tools, and relatedness was fostered through online collaboration and communication.

Finally, the findings also aligned with the principle of the Classroom Ecology Theory (Doyle, 1977) as teachers used digital platforms to organize time, routines, and expectations. This systematic use of technology reduced disruptions and maximized time for learning, showing how technology effectively complements classroom management as an organizational system.

Anchoring on legal foundations, the findings affirmed DepEd Order No. 42, s. 2017 (PPST) which emphasizes ICT integration and effective learning environment management as part of teacher professional standards. Likewise, DepEd Order No. 35, s. 2016 (LAC) highlighted the role of continuous professional learning communities in equipping teachers with the knowledge and confidence to implement innovative strategies like technology-enhanced classroom management.

CHAPTER 3

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This section presented the study's summary of findings, conclusions that were propounded from the findings, recommendations that were based from the conclusions and the recommendation for further studies.

SUMMARY OF FINDINGS

This section presented the summary of empirical findings of the study.

1. As to the level of student engagement in classrooms utilizing technology-driven classroom organization strategies, it indicated a very high level of student engagement since the students strongly agreed on most of the items presented. The result could be interpreted that the learners were engaged when teachers utilized technology in the daily delivery of the lesson.
2. As to the level of student engagement in classrooms utilizing traditional classroom organization, it also indicated a very high level of engagement since they strongly agreed on most of the items presented. These results suggested that students in the traditional approach reported similarly high engagement levels that they perceived their classroom environment as supported, structured, and conducive to learning despite the absence of technology integration.
3. As to testing the null hypothesis, independent samples t-test was used to differentiate the student engagement scores of the experimental and control groups. The findings indicated that the two groups were similar. Therefore, it suggested that the use of technology-driven classroom organization produced the same or equal impact on student engagement to the traditional classroom management. This literally means, that both traditional and technology-driven approach yields comparable levels of student engagement, indicating that regardless of the strategy used, students remained actively involved and responsive to classroom activities.
4. As to the level of teachers' implementation of technology-driven classroom organization strategies, it showed a very high level of teachers' implementation on technology since they strongly agreed on most of the items presented. The result showed that teachers consistently used technology in establishing classroom routines and setting expectations. This implied that teachers were confident and competent in utilizing technology to support classroom management practices that foster student engagement and learning.

CONCLUSION

Both traditional and technology-driven classroom organization strategies could result in a very high level of student engagement among elementary pupils. It created an engaging learning environment where learners collaborate, actively participate in class activities and develop a sense of responsibility

and motivation toward their learning tasks. Teachers played a vital role during the teaching-learning process since they act as the facilitator of learning. Traditional and Technology-driven classroom organization provided equal influence to student engagement as both approaches foster active participation, motivation and meaningful interaction among learners in the classroom setting. Teachers used technology integration in the daily delivery of the lessons which enhanced their instructional strategies and enabled them to manage their classrooms more efficiently while keeping students actively engaged.

These outcomes affirm the study's theoretical anchored Behaviorist Theory (Skinner, 1953) in which the consistent reinforcement, whether through traditional praise or digital rewards, strengthened desirable classroom behaviors and motivated pupils to stay engaged. Self-Determination Theory (Deci & Ryan, 1985) in which both strategies addressed students' needs for autonomy, competence, and relatedness. Technology, in particular, provided interactive choices and immediate feedback, enhancing motivation and ownership of learning.

Constructivist Theory (Piaget, 1952; Vygotsky, 1978) in which the engagement levels observed highlight that students construct knowledge more effectively when actively participating in meaningful, interactive, and collaborative learning tasks. Classroom Ecology Theory (Doyle, 1977) in which the effectiveness of both approaches demonstrated that classroom management depends on the teacher's ability to organize routines, structure time, and establish order, regardless of whether the strategy is traditional or technology-driven.

RECOMMENDATIONS

Based on the study's findings and conclusions, the following recommendations were profoundly reached:

1. It is recommended that School administrators must continue to support and equip teachers in using both traditional and technology-integrated strategies depending on the classroom needs and context.
2. It is also recommended to use blended teaching balancing ICT integration and the use of traditional methods with effective classroom routines to enhance engagement while imposing structure and discipline.
3. Teachers must discover and apply unique style of classroom management strategies that enhance behavioral and academic aspects.
4. Future researchers must explore other factors affecting student engagement such as teacher-student relationships, motivation, or instructional design, using a larger sample or qualitative data.

Recommendations for Further Studies

1. Technology-Driven Classroom Organization and Its Impact on Academic Achievement in Elementary Learners
2. The Role of Teacher Self-Efficacy in the Effective Implementation of Technology-Driven Classroom Organization
3. Exploring Student's Behavioral, Emotional and Cognitive Engagement in Technology-Driven Classroom
4. The Moderating Effect of Learner Motivation on Technology-Driven Classroom Organization and Student Engagement
5. An Experimental Study Comparing Traditional Classroom Organization and Technology-Driven Approaches

CHAPTER 4

OUTPUT OF THE STUDY

SMARTT CLASSROOM MANAGEMENT APPROACH

Rationale

Classroom organization played a vital role in enhancing student engagement and academic success. With the evolving landscape of education, integrating structured and strategic classroom organization approaches has become increasingly important. One such approach is the SMARTT Classroom Management Model, which emphasized Structured classroom routines, Motivation through rewards, Active learning, Responsive discipline, Teacher-student relationship building, and Technology integration. This framework aimed to create an organized, engaging, and technologically enhanced classroom that encouraged student participation and improves overall dynamics.

According to (Guo et al., 2024), structured classroom management involved organizing the classroom and routines in ways that helped students learn more and reduces disruptions. It includes having clear rules, procedures, and expectations to guide both behavior and learning. As Chen et al. & Pradeep (2023) noted, motivating students through rewards whether tangible or through recognition promotes positive behavior and better academic performance.

On the other hand, active learning means getting students directly involved in their own learning through interactive and collaborative activities. This approach kept students interested and helped them understand and remembered what they learn better (De Dieu Mushimiyimana & Peng et al., 2021). And a responsive discipline means using flexible and understanding approach that took each student's needs and situation into account. It focused on guiding behavior through positive reinforcement and helpful feedback (Bin & Jian, 2024).

According to Guo et al., 2024, building strong teacher-student relationship was a key to creating a classroom based on trust and respect, which helped boost student engagement and motivation. At the same time, using technology like smart classroom systems could improve teaching and learning by helping manage activities, personalized lessons, and enhanced communication (Pradeep & Tejas et al., 2023).

The findings of the study revealed that both experimental (technology-driven) and control (traditional) classrooms achieved a high level of student engagement, based on the responses of Grade 4 to 6 pupils. However, statistical analysis using an independent samples t-test showed that there was a slight difference in engagement between the two groups.

This suggests that while technology could improve classroom management, the other parts of the SMARTT framework—particularly structured routines, teacher-student relationships, and responsive discipline—were also essential in keeping students highly engaged, even without digital tools.

1. Objectives

This approach was created to help teachers in the following aspects:

1. Help teachers manage classrooms efficiently using traditional and technology-integrated classroom management;
2. Serve as basis or guide in the daily teaching-learning process; and
3. Promote a positive, inclusive, and structured learning environment.

2. Scheme of Implementation

1. The researcher will present a unique and systematic classroom management approach to help other teacher in the field in terms of enhancing student engagement.
2. The researcher will present this SMARTT framework to the school principal for the school's improvement planning and seeks permission to present it during LAC session.

3. Once approved, implement this approach as reflected on the action plan.
4. Monitor the implementation of the SMARTT framework.
5. Provide feedback.
6. Allow others to use the framework, replicate to help other schools.

SMARTT CLASSROOM MANAGEMENT APPROACH OPERATIONAL PLAN

| | | | | |
|--------------------------------|---|--|---|---|
| Source of Funds | Stakeholders, Sponsors | | | |
| Proposed Budget | P2,000 (printing of guides, checklist, monitoring tools, certificates, snacks) | | | |
| Expected Output | Teachers are informed and aligned with the SMARTT approach, Teachers receive SMARTT tools and materials | SMARTT applied across subjects and routines | Teachers submit feedback, checklists, or anecdotal notes | Best practices are shared for school-wide improvement |
| Persons Involved | Researcher, School Head, Teachers | Subject/ Grade Teachers | Teachers, Master Teachers | Teachers, School Head |
| Timeline (October 2025) | Week 1 | Weeks 2–5 | Weeks 3–6 | Week 6 or 7 |
| Activity | Orientation on SMARTT Framework Via LAC session, Distribution of Guide and Checklist | Implementation in Classrooms | Monitoring and Reflection | Sharing of Insights via LAC Session |
| Objectives | To orient teachers on the SMARTT approach and provide them with necessary tools and checklists for classroom application. | To integrate the SMARTT approach into daily classroom routines and instructional delivery. | To gather teacher feedback, document challenges, and evaluate the effectiveness of the SMARTT implementation. | To share best practices and insights gained from implementing the SMARTT framework for school-wide improvement. |

SMARTT Classroom Management Implementation Guide

Introduction

The SMARTT Classroom Management Approach is a structured and holistic strategy aimed at improving classroom order, student engagement, and overall teaching effectiveness. SMARTT stands for: Structured classroom routines, Motivation through rewards, Active learning, Responsive discipline, Teacher-student relationship building, and Technology integration. This guide offers practical tips and examples for using each part of the SMARTT approach in daily classroom practice.

SMARTT Classroom Management Guide

S- Structured Classroom Routines

Set predictable daily procedures, like greetings, seatwork, classroom jobs, and transition signals. Example: Display a visual schedule on the board so students know what to expect throughout the day.

M- Motivation Through Rewards

Use praise, sticker charts, point systems, or class rewards to encourage positive behavior. Example: Give stars for good behavior that can be exchanged for small prizes or privileges.

A -Active Learning

Engage students with group activities, games, hands-on tasks, and interactive discussions. Example: Set up learning stations or role-playing activities to make lessons more dynamic.

R – Responsive Discipline

Handle misbehavior calmly and consistently with logical consequences and reflective questions. Example: Instead of punishment, ask the student how they can fix the problem they caused.

T – Teacher-Student Relationship Building

Build mutual respect by learning students’ names, listening actively, and showing empathy. Example: Greet students at the door and check in with them regularly.

T – Technology Integration

Use digital tools like projectors, PowerPoint, videos, or apps to enhance lessons. Example: Introduce a topic with a video or a quiz app to review lessons interactively.

Monitoring Implementation

Teachers can track their use of SMARTT through self-reflection checklists, peer observations, or short student feedback forms. Administrators can include SMARTT indicators in classroom observations or LAC discussions.

Conclusion

The SMARTT Classroom Management Approach supports a balanced, responsive learning environment. By combining structure, motivation, engagement, discipline, relationships, and technology, teachers can better meet the diverse needs of 21st century learners.

SMARTT Classroom Management Implementation Checklist

This checklist helps teachers put the SMARTT Classroom Management Approach into practice and track how well it’s being used. It can be used weekly or monthly to see which components are consistently applied.

| SMARTT Component | Implementation Indicator | This Week (✓) | Notes / Reflections |
|-------------------------------|--|---------------|---------------------|
| Structured Classroom Routines | Daily routines are consistently followed (e.g., greetings, transitions, visual schedule) | | |
| Motivation Through Rewards | Students are rewarded with praise, points or tangible prizes) | | |
| Active Learning | Activities includes group work, games, projects | | |
| Responsive Discipline | Misbehavior is addressed calmly using logical consequences | | |
| Teacher-Student Relationship | Positive rapport is built through greetings, check-ins, and support | | |

| | | | |
|------------------------|---|--|--|
| Technology Integration | Digital tools (TV, laptop, apps) are used to enhance learning | | |
|------------------------|---|--|--|

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