



The Use of Bell Ringers in Improving Students' Academic Performance

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Authors' contributions

This work was carried out in collaboration among all authors. Author JGP designed the study. Author JB conducted the gathering of data, wrote the protocol. Author DGM reviewed the entire study. All authors read and approved the final manuscript.

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ABSTRACT

Aims: To determine the impact of the Bell Ringers in Science classroom.

Study Design: Quantitative method through interviews.

Place and Duration of Study: Monkayo College of Arts, Science, and Technology in the 2nd semester of School Year 2023-2024.

Methodology: The participants of the study were purposely chosen. The researchers identified the least learned competencies which became the basis for developing the Bell Ringers during the midterm period. Bell Ringers were prepared ahead of time. After the implementation of the Bell Ringers, students' feedback and suggestions were solicited through interviews. Data gathered were analyzed into themes.

Results: Evidently, students exhibited heightened engagement, focus, and mental preparedness for lessons, resulting in improved knowledge retention. Furthermore, the incorporation of Bell Ringers facilitated effective classroom management for teachers, affording improved time utilization and fostering meaningful individual interactions with students. As a formative assessment tool, Bell Ringers not only bolstered students' familiarity with concepts but also nurtured concentration, self-

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discipline, interaction, productivity, and positive attitudes. The constructive effects of Bell Ringers were discernibly mirrored in the student's exam results.

Conclusion: Integration of Bell Ringers into instructional practices is a universally beneficial approach spanning diverse subjects and grade levels. It presents a strategic means to captivate students, establishing a conducive learning atmosphere at the outset of each class and ultimately contributing to elevated academic performance.

Keywords: Bell ringers; students' performance; class engagement; bachelor of elementary education; action research; moncast.

1. INTRODUCTION

The pursuit of high-quality education has long been a central objective for educational leaders worldwide. This objective serves to provide educators with a clear purpose in their teaching, aligning instruction with elevated standards. The global initiative Education for All (EFA) underscores this commitment to enhance education, echoing the principles set forth in the Philippines' Education Act of 1982, Section 1, emphasizing the state's duty to safeguard and promote citizens' right to quality education at all levels, ensuring accessibility for all.

In response to this commitment, the Department of Education in the Philippines has undertaken significant initiatives, notably the enhanced K-12 program, aimed at enhancing the Basic Education Curriculum. The primary goals include elevating academic performance, particularly in English, Science, and Mathematics, and ensuring equitable access to suitable learning and life skills programs for all learners. In this context, educators play a crucial role in addressing the diverse learning needs of students, especially when they encounter difficulties in the learning process.

One common challenge faced by teachers in the classroom is effectively managing and engaging students as they enter the room, setting the right tone for the upcoming class. The unpreparedness of students during these critical first moments can impact their learning outcomes not only for the day but throughout an entire grading period. REFERENCE TO [1]. emphasizes the significance of the initial minutes of class, asserting that it sets the atmosphere for the rest of the session.

Teachers often grapple with the task of transitioning students mentally from one subject to another due to the demands of switching classes. Recognizing this challenge [1]. introduces the concept of "bell ringers" among

his students in Florida, as a potential solution. Bell ringers, or start-of-class activities, serve as valuable tools benefiting both students and teachers. Mendoza's study demonstrates an increase in average class scores and students' proficiency when daily bell ringers are implemented effectively. The findings of [1]. WERE SUPPORTED BY [2]. who also conducted a study on bell ringers among his learners in Florida. Further, in reference to [3], who made a study on bell ringers among his students in montana, showed increased student engagement, while [4]. in oklahoma observed student's self-advocacy and efficiency.

Formative assessment, synonymous with assessment for learning, becomes a crucial tool for educators in diagnosing student learning and tailoring instruction accordingly [5]. Bell ringers align with the concept of formative assessment, utilizing students' responses to guide instruction, either through class reviews or small group activities. ABOUT [6]. describes bell ringers as both a classroom management tool and an educational strategy, effectively engaging students from the moment they enter the room and setting the tone for focused learning throughout the class period.

In reference to [4]. further emphasizes the effectiveness of bell ringers in commencing a class period. As teachers handle administrative tasks such as attendance, questions, and homework collection, bell ringers capture students' attention and prepare their minds for the upcoming lesson by reviewing previously taught concepts. Romano suggests that to optimize effectiveness, teachers should tailor bell ringers to the specific needs of each class.

In light of these considerations, this action research posts that the implementation of bell ringers will lead to increased student knowledge retention. the intervention, utilizing bell ringers would improve academic performance in Science and offer a practical approach for teachers.

Referred to by various names such as Question of the Day, Bell Works, or Starters, these activities not only set the stage for a successful class but also cultivate students responsibility and accountability, allowing teachers to address immediate needs effectively.

1.1 Objectives of the Study

The objective of the study was to determine the impact of the bell ringers in Science classrooms. Specifically, it sought to:

1. determine how bell ringers impact the performance of the BEED students during the midterm period?
2. determine what the students' impressions of carrying out the bell ringer activities at the beginning of class?

It is the aspiration of every educator to provide a quality education and witness exemplary performance from their students. Bell ringers represent a pedagogical practice aimed at enhancing students' academic achievements. These brief and focused tasks serve to immediately engage students, fostering a habit of staying on task upon entering the classroom within a concise 5-10 minute timeframe. The versatility of bell ringers lies in their ability to connect with previously covered content, refresh students' memories, identify misconceptions or knowledge gaps, align with current lesson topics, and serve as a tool for teachers to reflect on their instructional practices.

Various suggested bell ringers can be employed to achieve these objectives. These include activities such as playing Classcraft, trying popcorn reading, providing a platform for students to share updates on their lives to decompress, solving brain teasers, watching relevant videos, initiating debates, presenting writing prompts, creating crosswords, taking a moment for mindful breathing, sharing a daily joke, incorporating games, adjusting volume levels for attention, striking a musical chord, embracing creativity like a butterfly, narrating countdowns, employing clever attention-grabbing techniques, using call-and-response methods, introducing unexpected elements, engaging in spot-the-difference exercises, matching definitions, and generating new words from given phrases.

Incorporating these diverse bell ringers not only ensures an immediate and effective transition

into the learning environment but also provides an avenue for continuous assessment and improvement. By utilizing these strategies, educators can create an atmosphere that promotes active student participation, critical thinking, and a positive mindset, ultimately contributing to improved academic performance and a more enriching learning experience.

2. MATERIALS AND METHODS

The study participants comprised 32 specifically selected students enrolled in the Bachelor of Elementary Education program at Monkayo College of Arts, Science, and Technology during the second semester of the academic year 2023-2024. The researchers, in their initial phase, identified the least mastered competencies among the students. These identified areas served as the foundation for the development of Bell Ringers or prompt activities within the midterm period. The collaborative efforts of the researchers were instrumental in preparing these Bell Ringers, with ongoing feedback and suggestions sought from peers to enhance their effectiveness. Due to the limited number of participants for this study, the researchers favoured [7], who mentioned that the results of this study can not generalize the entire BEED impressions of the bring ringers. Findings may only be true for the participants of the study.

To implement the intervention, the researchers created and reproduced copies of daily Bell Ringers designed to cover a four-week period of lessons. Teachers then administered these Bell Ringers on a daily basis, and at the conclusion of the four weeks, or post-midterm, the participants were interviewed to gather their impressions. The collected impressions were systematically organized and grouped based on recurring themes.

Qualitative data on students' impressions of the bell ringer intervention were collected during this action research. The researchers aimed to understand how the intervention positively impacted students' learning experiences. In reference to [8], the primary aim of the qualitative method is to decipher the meaning of the experiences upon the evaluation.

Thematic analysis was employed to comprehensively capture the students' experiences and evaluate the impact of the intervention. Thematic analysis, as described by [9], involves searching across a data set to

identify, analyze, and report recurring patterns. It serves as a method for describing data while necessitating interpretation in the selection of codes and the construction of themes. This approach ensures a nuanced understanding of how the intervention contributed to the enhancement and intensification of students' learning experiences.

3. RESULTS AND DISCUSSION

For easy understanding of the results, the researchers favoured [9]. the presentation of the results using a table where essential themes and core ideas were included.

3.1 Students were Engaged and Focused

Research has shown that engaging students at the beginning of the class through activities like bell ringers can positively impact their focus and preparedness for learning.

"They walked into the classroom with points of direction and ready to work knowing they have something to do every day."

When students have a routine to follow and know what to expect, they are more likely to come into the classroom ready to participate actively in the lesson [10]. Bell ringers can be a transition tool, helping students shift their mindset from one subject to another and increasing their overall engagement [11].

3.2 Manageable Classroom

Bell ringers can also be advantageous for teachers. As students engage in the initial activity, teachers can take care of administrative tasks, such as checking attendance or distributing materials.

"The class started calmer. Students become more confident, attentive, and disciplined."

This time-saving aspect allows teachers to start the lesson smoothly and effectively [10]. Additionally, bell ringers can help establish a positive classroom climate, setting a productive tone for the rest of the class period [6].

Table 1. Essential themes on the use of bell ringers in promoting class performance

Essential Themes	Core Ideas
Students were engaged and focused Manageable Classroom	They walked into the classroom with points of direction and were ready to work, knowing they had something to do every day. The class started calmer. Students become more confident, attentive, and disciplined.
Students were Mentally Prepared in Class Improved Retention	Students have a positive mindset daily and can work independently. Students were stimulated and quickly recalled concepts taught. They also become more active and participative during class discussions, reviewing past lessons and introducing new lessons. The results of the students' midterm exams were all proficient.
Developed students' familiarity with the concepts learned	Students can easily recall the lesson because of the daily quick assessment activity given by the teacher. Like being constantly probed by the teacher at the beginning of the lesson on knowledge of specific topics.
Enabled students to concentrate and practice self-discipline.	Sorts of distractions – my friends and my cell phone are immediately off upon getting inside the classroom. My attention is captured by the activity given by the teacher each day as soon as I take my seat upon entering the classroom. Become more focused when the official lesson begins.
Promoted interaction and productivity.	Students were becoming more productive as I looked forward to the opening activities the teacher would give every day. Instead of talking nonsense with seatmates as we entered the classroom, we were diverted to discussing the activity the teacher had prepared for us to do.
Promoted positive attitude, creative and critical thinking skills	Students learned to work fast and independently as the time on the task given was short. Reasoning skills were developed in answering open-ended questions given by the teacher.

3.3 Students Were Mentally Prepared in Class

Using thought-provoking questions or activities in bell ringers encourages students to think critically and creatively.

"Students have a positive mindset daily and can work independently."

These short exercises can prompt them to analyze information, solve problems, and engage in higher-order thinking [5].

3.4 Improved Retention

Bell ringers can be designed to revisit previously taught material or introduce new concepts. It helps reinforce learning and improve retention.

"Students were stimulated and easily recalled concepts taught."

"They also become more active and participative during class discussion during the review of past lessons and introduction of the new lesson."

"The result of the student's midterm exam was all proficient."

Frequent exposure to essential concepts through bell ringer activities can enhance students' familiarity with the material, making it easier to recall and apply the information in later lessons [12].

The students get into the habit of transitioning from class to class and preparing for various tasks. They became more mentally prepared and engaged and were able to develop familiarity with the concepts introduced or previously learned. They walked into the room more focused and ready to work when they knew they had something to do daily. Students were motivated to review previous materials or introduce new materials depending on the questions assigned. Their creativity and critical thinking skills were developed.

A Bell ringer is a lifesaver for teachers, too. The class will start calmer and more on task, and the teacher can also accomplish much. Teachers will have time to check attendance, pass back work, and have a quick one-on-one chat with the students.

Overall, the regular use of bell ringers has created a more structured and focused learning

environment. Students benefit from improved engagement, better preparedness, and enhanced critical thinking skills. At the same time, teachers gain valuable time for classroom management tasks and can capitalize on the opportunity to build a positive and productive classroom atmosphere.

3.5 Developed Students' Familiarity with the Concepts Learned

Developing students' familiarity with the concepts learned is crucial to effective teaching and learning. The use of bell ringers as an intervention in the classroom has shown to be beneficial in achieving this goal. According to the Participant 1, during the interview, he said;

"Students can easily recall the lesson because of the daily quick assessment activity given by the teacher."

On the other hand, Participant 2 added,

"Like to be constantly probed by the teacher at the beginning of the lesson on knowledge of specific topics."

One of the critical ways bell ringers contribute to developing students' familiarity with concepts is through reinforcement and retrieval practice. Bell ringers often revisit previously taught material, requiring students to recall and apply what they have learned [13]. This retrieval process strengthens memory retention, helping students retain information over the long term and increasing their familiarity with the subject matter.

In addition, Bell ringers can be designed to cover a range of topics, including those recently taught. This learning approach, where students encounter the same material at spaced intervals, enhances their understanding and familiarity with the concepts [14]. It also helps to counter the "forgetting curve" and reinforces learning over time.

Similarly, Bell ringers can also be used to connect new concepts to previously learned material. Students can see the relevance and interconnectedness of various topics by incorporating questions or activities that relate to prior lessons [15]. This strategy aids in consolidating knowledge and deepening students' understanding of the subject matter.

Regular engagement with bell ringers makes students more comfortable and confident with the content. As they find success in answering

questions or completing tasks related to the concepts they have learned, their confidence grows, increasing engagement and participation in class discussions [12].

3.6 Enabled Students to Concentrate and Practice Self-discipline

In the interview with the students, they shared that the intervention enabled them to concentrate and practice self-discipline. Participant 5 mentioned;

"All sorts of distractions – my friends and my cell phone are immediately off upon getting inside the classroom."

Furthermore, Participant 3 explained;

"My attention is captured by the activity given by the teacher each day as soon as I take my seat upon entering the classroom."

With the same thoughts, Participant 4 said,

"We become more focused when the official lesson begins."

When students are presented with a bell ringer activity when they enter the classroom, it immediately captures their attention and redirects their focus to the subject matter [6]. This structured start to the class helps students shift their mindset from other distractions and social interactions to the task at hand. As a result, they become more engaged and ready to participate actively in the learning process.

3.7 Promoted Interaction and Productivity

As revealed during the gathering of data, it was confirmed by the students that the intervention had helped the students' interaction and productivity. In the interview, Participant 7 uttered,

"Students were becoming more productive as I look forward every day to the opening activities the teacher will give."

With the same point, Participant 6 relayed;

"Instead of talking nonsense with seatmates as we enter the classroom, we are diverted discussing the activity the teacher had prepared for us to do."

The consistent use of bell ringers establishes a daily routine in the classroom. Students become accustomed to starting each class with a brief activity, creating a sense of structure and predictability. This routine instilled discipline and

a sense of responsibility in students, as they know they must be mentally prepared and on task at the beginning of each lesson [11]. As students focus on the bell ringer activity, distractions from their peers or electronic devices are minimized. It creates a conducive learning environment and allows students to concentrate better on their academic tasks [6].

3.8 Promoted Positive Attitude, Creative and Critical Thinking Skills

As shared by the participants, they emphasized how the intervention helped them promote their positive attitude and creative and critical thinking. Participant 8 conveyed;

"Students learned to work fast and independently as time on task given is short."

Participant 9 also explicated;

"Questions and practice activities the teacher gives are intriguing and challenging for us."

As stated by Participant 10,

Reasoning skills were developed in answering open-ended questions given by the teacher.

The use of bell ringers in the classroom has been shown to promote a positive attitude among students and enhance their creative and critical thinking skills. Bell ringers are often designed to be engaging and thought-provoking, creating a positive and enjoyable start to the class [6]. Students look forward to these activities, which can be fun, challenging, or related to real-world scenarios. The positive experience at the beginning of each lesson sets a favourable tone for the rest of the class, encouraging students to approach learning enthusiastically and positively [11].

In addition, Bell ringers can involve open-ended questions, creative tasks, or problem-solving challenges that require students to think outside the box [16]. These activities stimulate students' imagination and encourage them to explore diverse perspectives. As they tackle creative tasks regularly, students become more comfortable expressing their ideas and developing innovative solutions.

4. CONCLUSION

The study's findings SHOW IMPROVEMENT IN STUDENTS' PERFORMANCE using the bell ringer activities and their performance in classes results in superior academic

achievements. These outcomes underscore the impact of bell ringers - brief assessments, activities, or assignments administered as students enter the classroom - in augmenting learning outcomes. Serving as an excellent class commencement, bell ringers capture immediate attention, guiding students to focus on forthcoming lessons and review previously covered material. This approach transcends subject areas and grade levels, proving to be a strategic and adaptable method for engaging students, fostering interest, and promoting active participation in each lesson. The adept implementation of bell ringers by educators not only cultivates a positive and productive learning environment but also contributes to an upswing in academic performance, facilitating smoother classroom management at the beginning of each period. Beyond immediate benefits, the implications extend as a practical and scalable solution for educators striving to optimize their students' learning experiences.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mendoza KR. Engaging Generation Z: A case study on motivating the post-millennial traditional college student in the classroom. Johnson University; 2018.
2. Herbst C. Does the use of bell ringers as formative assessments affect student retention of knowledge in a third grade science classroom; 2018.
3. Montemurro AM. Increasing mental muscle with engaging bell ringers in a science classroom; 2018.
4. Lingo ME, Williams-Diehm KL, Martin JE, McConnell AE. Teaching transition self-determination knowledge and skills using the ME! bell ringers. *Career Development and Transition for Exceptional Individuals*. 2018;41(3):185-189.
5. Robinson S. Teacher perceptions of formative assessments on student learning in K-12 classrooms. Gardner-Webb University; 2019.
6. Boehner T. Bell ringers that keep the classroom humming. *Science Scope*. 2011;35(3):8-9.
7. Romano M. Bellringers: An effective strategy for classroom management. *Science Scope*. 2011;35(5):64-67.
8. San Jose A, Jose RS, Robles-Concepcion MG. Mothers as teachers: The new role of mothers in the new normal. *Journal of Learning for Development (JL4D)*. 2022;9(2):351-362. Available: <https://jl4d.org/index.php/ejl4d/article/view/566/729>
9. San Jose AE. Translating theory into practice: The gender and development training evaluations using kirkpatrick's model. *Sci.Int (Lahore)*; 2023;35(4):605-609.
10. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative research in psychology*. 2006 Apr 1;3(2):77.
11. San Jose AE, Galvez RM, Sagbigal D. Anecdotes of male and female students of flexible learning modality. *Gradiva*, 2023;62(12) pp1-16. Available: <https://gradiva.it/dec-2023/>
12. Pitler H, Hubbell ER, Kuhn M. I am using technology with classroom instruction that works (2nded.). ASCD; 2012.
13. Ellis L. Teachers' perceptions about classroom management preparedness. (Doctoral dissertation, Walden University); 2018.
14. Marzano RJ. *The New Art and Science of Teaching*. ASCD; 2017.
15. McDaniel MA, Roediger III HL, Mcdermott KB. "Learning and Memory." In D. Reisberg (Ed.), *Cognition: Exploring the Science of the Mind*. W. W. Norton & Company. 2013;5:267-310.
16. Carpenter SK, Cepeda NJ, Rohrer D, Kang SH, Pashler H. Using spacing to enhance diverse forms of learning: Review of recent research and implications for instruction. *Educational Psychology Review*. 2012;24(3):369-378.

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