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COUNTING WITH STICKS: ENHANCING GRADE 1 STUDENTS' COUNTING SKILLS USING C.H.A.M.P.S FOR MATH ACTIVITIES

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ABSTRACT

One of the persistent challenges among elementary pupils is the development of strong counting skills, which are foundational to early mathematical learning. This quasi-experimental study aimed to determine the effectiveness of the C.H.A.M.P.S. math activities in improving the counting skills of Grade 1 students. The C.H.A.M.P.S. framework consists of six interactive strategies: C – Counting with Sticks (Popsicle Stick Activities), H – Hands-On with Dominoes, A – Adding Play money Practice, M – Math Time with Straws, P – Perfecting Coin Counting, and S – Sorting Fruits & Veggies. These activities were implemented with 30 Grade 1 pupils from Maniki Central Elementary School SPED Center during the 2024–2025 academic year. A researcher-designed pre-test and post-test were used to measure students' counting proficiency before and after the intervention. Pre-test results indicated that the participants demonstrated below-grade-level proficiency in counting. After the implementation of the C.H.A.M.P.S. math activities, students' post-test scores improved significantly. A paired sample t-test revealed a statistically significant difference between pre-test and post-test scores, $t(29) = 24.317$, $p < .001$, indicating a substantial gain in counting skills. These findings suggest that the C.H.A.M.P.S. math activities effectively enhance early numeracy development. The results support the integration of hands-on, contextualized learning strategies into early grade mathematics instruction. It is recommended that educators and policymakers incorporate similar evidence-based interventions into the primary mathematics curriculum to improve counting competency and overall mathematics achievement in early learners.

KEYWORDS: *Quasi-Experimental, Counting, 30 Grade 1-Learners, Math Activities, Philippines*

INTRODUCTION

Mathematics is a cornerstone of early education, and for Grade 1 students, mastering foundational math skills is essential. One critical aspect is counting, which involves both numerical understanding and fine motor skills (Shayer, 2021). As students move beyond simple number recognition, accurate and confident counting is crucial for success in more complex mathematical tasks (Smith, 2019). However, many Grade 1 learners face challenges in mastering counting, often struggling with number sequencing and understanding quantity. These difficulties can create gaps in learning that persist as students' progress through their education (Brown & Clark, 2020).

In primary education, Grade 1 students in China, Indonesia, and Ghana face common challenges in mastering foundational math skills like counting and basic arithmetic. In China, issues such as improper number formation and sequencing difficulties hinder students' math progress, especially in rural areas with limited resources (Li, 2021). Similarly, in Indonesia, students struggle with basic counting and addition, and lack of interactive tools like counting sticks makes learning difficult.

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However, research shows that such hands-on methods significantly improve performance, particularly in areas with fewer resources (Masrukahtin, Siswanto, & Susilo, 2022). In Ghana, Kindergarten learners face difficulties with subtraction due to its abstract nature and limited teaching aids, leading to challenges in numeracy development, especially in rural schools (Mohammed et al., 2025). Across all three countries, access to resources, personalized instruction, and interactive tools are essential for overcoming these barriers and supporting early math proficiency.

In Marikina, Grade 1 students struggle with basic counting and number sense, particularly in public schools, due to a lack of hands-on materials and activities that cater to diverse learning styles. Many students also face difficulties with number recognition and simple arithmetic, exacerbated by the shift to online learning during the COVID-19 pandemic (Dela Cruz, 2022). In Quiapo City, Jose Magsaysay Elementary School students experience similar challenges with numeracy despite urban resources. The introduction of a Localized Numeracy Assessment Tool revealed the need for focused interventions like regular drills and context-based instructional materials to improve student engagement and numeracy (Laya et al., 2023). Moreover, In Cavite, Grade 4 students face challenges with multi-digit multiplication, particularly within home-based learning environments. A study by Mayos (2024) at Antonio B. Del Rosario Sr. Memorial Elementary School addressed this issue by introducing stick multiplication. This method utilizes counting sticks to help students visualize and solve multiplication problems, and it significantly improved their understanding of the concept.

In the Division of Davao del Norte, specifically at Maniki Central Elementary School, stems from the widespread difficulties Grade 1 students face in mastering basic math skills, particularly in counting numbers. These challenges are a significant academic concern, as students struggle with foundational numeracy concepts such as number identification and sequencing. The lack of effective interventions or adequate support for early numeracy difficulties exacerbates the situation, making it difficult for students to keep up with more advanced mathematical concepts. This issue hinders not only their ability to perform simple arithmetic tasks but also impacts their overall academic progress in mathematics, setting a foundation for future learning gaps.

This action research was prompted by the challenges Grade 1 students at Maniki Central Elementary School face in developing basic numeracy skills, particularly in counting. As a student-teacher, it is crucial to enhance these skills as they directly impact students' academic performance. This study holds significant societal implications, as it addresses the foundational numeracy struggles of learners, focusing on writing and counting practices. Understanding these challenges provides valuable insights into the barriers elementary students face in math, including difficulties with number recognition and writing.

Given the persistent issues with numeracy skills, particularly in reading, comprehension, and number understanding, this research aims to explore actionable interventions to improve counting skills. These challenges create long-term negative outcomes for students' academic success, making it imperative to address them through effective strategies and innovations. This action research will serve as a bridge for intervention, aiming to improve the numeracy skills of elementary learners.

International research, such as Widyanengrum et al. (2023), focused on improving counting skills in fifth graders, while Muldoon (2012) examined counting difficulties in Grade 7 learners. However, these studies do not address the crucial early stage of Grade 1, where numeracy skills must first be developed. This study fills this gap by focusing on the vital need to strengthen Grade 1 students' counting skills, contributing to the broader body of literature on early numeracy development.

RESEARCH QUESTIONS

The main objective of this quasi-experimental study was to evaluate the effectiveness of C.H.A.M.P.S. math activities in improving Grade 1 students' number writing skills. The study aimed to answer the following research questions:

1. What is the level of counting skills of Grade 1 students before the use of C.H.A.M.P.S math activities?
2. What is the level of counting skills of Grade 1 students after the use of C.H.A.M.P.S math activities?
3. What is the difference in counting skills before and after the intervention using C.H.A.M.P.S math activities?
4. What insights can be drawn from the implementation of the C.H.A.M.P.S intervention regarding its effectiveness in enhancing students' counting abilities?

PROPOSED INTERVENTION

In this study, we introduced an intervention named C.H.A.M.P.S, designed to strengthen students' foundational math skills through interactive, hands-on activities. Each element of C.H.A.M.P.S represents a specific, tactile learning strategy: Counting with Sticks (using popsicle sticks for counting and grouping), Hands-On with Dominoes (exploring number patterns and operations), Adding Playmoney Practice (reinforcing addition and money skills), Math Time with Straws (developing place value understanding), Perfecting Coin Counting (practicing real-world math with coins), and Sorting Fruits & Veggies (building classification and patterning skills). By using every day, relatable objects, the intervention made math more engaging and accessible. The goal was not only to improve core math skills but also to foster confidence and enthusiasm in learners through active, enjoyable experiences.

RESEARCH METHODOLOGY

Research Design

This study used an action research design to assess the impact of C.H.A.M.P.S. math activities on Grade 1 students' math skills. Action research was chosen for its flexibility in monitoring and adjusting interventions, with pre-test and post-test comparisons to measure progress. The sample included 30 Grade 1 students from Maniki Central Elementary School SPED Center, selected via purposive sampling to represent varying levels of math proficiency.

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Pre-test and post-test assessments were adapted from existing tools, ensuring relevance to Grade 1 learners and aligned with the study's objectives. The reliability and validity of these assessments were confirmed through pilot testing.
The eight-week intervention involved daily practice using C.H.A.M.P.S. math activities, with guidance from teachers to improve counting accuracy, clarity, and speed. A post-test was administered at the end of the intervention to assess skill improvements.

Data were analyzed using paired sample t-tests to determine if the observed changes in number writing skills were statistically significant.

PARTICIPANTS

This action research involved 30 Grade 1 students from Maniki Elementary School SPED Center during the school year 2024–2025. These students were chosen because they showed a need for improvement in their math skills. They were also selected because Grade 1 is a crucial stage where students build basic math foundations. Each student took a pretest to measure their initial skills, joined in C.H.A.M.P.S math activities as an intervention, and then took a post-test. This helped the researchers find out if the students' math skills improved after participating in the activities.

INSTRUMENTS OF THE STUDY

The researchers adapted observation checklists and assessment tools from online sources to measure the effectiveness of the intervention on enhancing counting skills. The instrument is based on the study by Masrukahti et al. (2020), titled "The Use of Counting Media Sticks on Addition Materials to Improve Grade 1 Students' Learning Outcomes." The content of the assessment emphasizes developing students' counting abilities through hands-on and strategic activities using counting sticks. The tasks are designed to engage students in various strategies, such as grouping sticks, identifying quantities, and sequencing numbers. The focus is on fostering accuracy, comprehension, and fluency in counting through interactive and repetitive activities. These activities aim to enhance students' understanding of numbers and their relationships by utilizing tangible tools that make abstract concepts more accessible. The instrument consists of multiple sections that assess counting progress through a combination of individual and group tasks, ensuring a comprehensive evaluation of the intervention's effectiveness in improving students' foundational math skills.

Range of Mean	Descriptive Level	Interpretation
90-100	Very High	Students demonstrate an exceptional understanding of counting concepts through structured activities, organizing their thoughts clearly and using precise mathematical vocabulary. Their work is highly organized and reflects an advanced grasp of counting, mirroring the clarity and sophistication seen in exemplary writing.
85-89	High	Students show a thorough understanding of counting by following a clear and structured approach, effectively staying organized in their work. They are able to use mathematical vocabulary correctly and complete tasks with confidence, demonstrating high-level skills.
67-84	Average	Students demonstrate a clear understanding of counting concepts, presenting their ideas in a well-organized manner. While they use a varied but adequate vocabulary and show some precision, their work may contain minor errors, and they may use basic transitions in their explanations.
46-66	Low	Students show satisfactory understanding of counting, but their work lacks some organization, and they use moderately varied vocabulary with occasional misuse. While communication remains clear, there are noticeable issues with leading to some confusion in their explanations.
45 below	Very Low	Students demonstrate basic counting skills but struggle with understanding and organizing their thoughts clearly. Their work is often unclear or incoherent, marked by numerous errors in vocabulary, grammar, punctuation, and structure, which significantly hinder their ability to communicate their counting strategies effectively.

PROCEDURE

To collect the necessary data for this research, the following steps were implemented. Prior to the study, a formal request was submitted to the school principal to gain permission for conducting the research with Grade 1 students. Initially, a pre-test was administered using an adapted assessment tool to evaluate the students' baseline counting skills. Following the pre-test, the intervention, which involved the implementation of C.H.A.M.P.S for Math Activities using counting sticks, was introduced. Over a period of four months, students participated in structured activities focusing on various strategies for counting, including grouping sticks, sequencing numbers, and matching quantities to numerical representations. These activities were designed to make counting interactive and engaging, encouraging active participation and comprehension. At the conclusion of the intervention, a post-test was conducted using the same assessment tool to measure any improvements in the students' counting skills. The data collected from both the pre-test and post-test were carefully analyzed, collated, and tabulated to determine the effectiveness of the intervention in enhancing Grade 1 students' math skills.

ETHICAL CONSIDERATIONS

Observing ethical standards in research is essential when investigating the enhancement of math skills using C.H.A.M.P.S math activities. Central to this study are the

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principles of respect for participants' autonomy, ensuring they have the freedom to engage with math activities voluntarily and are not coerced into participation. The study adheres to beneficence and non-maleficence, ensuring that the use of math activities benefits learners without causing harm, either physically or mentally. The research also prioritizes justice, ensuring equal access to C.H.A.M.P.S math activities and avoiding any biases that could disadvantage certain groups of learners based on socio-economic status, race, or geographic location. Informed consent is a cornerstone of the research process, with participants fully aware of the purpose, risks, and potential benefits of the study before engaging.

Furthermore, confidentiality and data protection are upheld by safeguarding personal and educational data collected during the study, ensuring it is used only for research purposes. The study maintains integrity by avoiding any deceptive practices or misrepresentation of C.H.A.M.P.S math activities effectiveness and actively addresses potential conflicts of interest to ensure that findings are presented transparently and without bias. By adhering to these ethical principles, the research ensures that it promotes fairness, trust, and accountability, while striving for knowledge and truth in the exploration of number tracing potential in writing skills.

RESULTS AND DISCUSSIONS

Research Question No. 1: What is the level of counting skills of Grade 1 students before the use of C.H.A.M.P.S math activities?

This chapter presents the summary of the findings about the results of enhancing grade 1 students' counting skills using C.H.A.M.P.S for math activities in Maniki Central Elementary School. Analysis and interpretations of data were done parallel to the research objectives.

Presented in Table 1 are the pretest results of the 30 students in the experimental group, reflecting their performance in counting problems. The group's overall average score was 10.5%, with a standard deviation of 14.79, indicating a wide

Table 1
Mean Average of the Score in Pre-test

Score	Frequency	Percentage
5	1	3.33%
6	2	6.67%
7	3	10.00%
8	2	6.67%
9	4	13.33%
10	4	13.33%
11	4	13.33%
12	3	10.00%
13	1	3.33%
14	2	6.67%
15	1	3.33%
16	2	6.67%
17	1	3.33%
Total	**30**	**100%**
Overall		10.5
Mean Percentage Score		61.77%
Description		**Low**

variation in performance levels. The highest score (17) and the lowest score (5) were each achieved by one student (3.33%), while the most frequent score was recorded by 4 students (20.00%). These results suggest a diverse range of counting abilities, with some students performing well below the average. Despite a small cluster around the mode, the overall low mean score confirms that students' counting skills were generally weak prior to the intervention, highlighting the need for targeted and engaging instructional strategies.

Before the intervention was implemented, as detailed in Table 1 of Chapter 3, the pretest score was 10.5, which is classified as very low. This indicates that the students' counting skills were below expectations. The low score suggests that first graders have limited exposure to the Math activities, making it challenging for them to understand counting. Geary (2020) identified several factors contributing to the difficulties students faces in learning counting skills. He noted that young children often struggle with counting due to insufficient exposure to numerical concepts early in their education, as well as a lack of structured math activities at home or school. Additionally, developmental delays or limited language skills can make it difficult for students to fully grasp counting sequences and the concept of one-to-one correspondence. These factors hinder young learners from developing strong counting abilities and impede their overall mathematical development.

In a related study, Yunus et al. (2020) found that early-grade students face significant challenges in acquiring counting skills. The study suggested that students' counting abilities are often underdeveloped due to ineffective teaching methods, such as rote memorization without hands-on learning experiences. Despite engaging with numbers in early education, many

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students struggle with counting fluency, especially when asked to count objects or understand the relationship between numbers and quantities. This lack of mastery in counting fundamentals contributes to ongoing difficulties in mathematics as they progress in their schooling.

Moreover, a related study by Siegler et al. (2021) found that young children often experience difficulties in counting due to limited opportunities for hands-on practice and interaction with numerical concepts. The study highlighted that students who were not regularly engaged in interactive counting activities, such as using manipulatives or participating in guided math games, often developed weaker number sense and had trouble with tasks like one-to-one correspondence and number sequencing. These challenges were particularly evident in early grades, where a lack of foundational skills in counting significantly hindered students' ability to grasp more complex math concepts later in their education.

Research Question No. 2: What is the level of counting skills of Grade 1 students after the use of C.H.A.M.P.S math activities?

This chapter presents the summary of the findings about the results of enhancing grade 1 students' counting skills using C.H.A.M.P.S for math activities in Maniki Central Elementary School. Analysis and interpretations of data were done parallel to the research objectives.

Table 2 presents the post-test results, showing the performance of 30 students in the experimental group on math activities. The group's average score was 17.27%, with 10 students (33.33%) achieving the highest score of 20, and two students (6.67%) obtaining the lowest score of 12. The most frequent score, achieved by ten students (33.33%), was 20. These results highlight a range of performance levels within the group, but the majority of students performed near or above the group's average, reflecting an overall improvement in counting activities.

The mean score of 17.27 in the post-test indicates a substantial improvement compared to the pretest results, showing that the C.H.A.M.P.S intervention significantly enhanced Grade 1 students' counting skills through the use of C.H.AM.P.S math activities. Specifically, the intervention led to gains in several areas: improved number recognition, accurate one-to-one correspondence, and

Table 2
Mean Average of the Score in Post-test

Score	Frequency	Percentage
12	2	6.67%
13	4	13.33%
14	3	10.00%
16	1	3.33%
17	1	3.33%
18	4	13.33%
19	5	16.67%
20	10	33.33%
Total	**30**	**100.00%**
Overall		17.27
Mean Percentage Score		86.33%
Description		**High**

strengthened understanding of quantity and value. Students demonstrated increased ability to apply counting strategies using concrete materials like sticks, and to represent numbers in meaningful ways—both of which are essential components in building foundational math proficiency.

Furthermore, the improvements extended beyond mere number recognition. The students displayed better critical thinking in math activities, where they applied newly learned counting strategies to solve problems and make connections between quantities and numerical concepts. These skills are crucial for developing comprehensive mathematical proficiency, suggesting that the intervention not only increased the students' ability to count but also deepened their understanding of how to apply counting effectively in various contexts.

This finding aligns with the research of Syakir & Elihami (2020), which demonstrated that daily structured practice significantly enhances students' mastery of foundational math skills. The study supports the idea that consistent, focused instruction—such as counting with sticks—is a powerful tool for improving mathematical understanding. Linlin et al. (2020) further emphasized that early hands-on math instruction lays the foundation for future mathematical development. A solid and well-developed sense of numbers is essential for achieving proficiency in math, as it enables learners to solve problems fluently and flexibly.

In addition, a related study by Miller & Lee (2021) also supports this finding, highlighting that hands-on math activities, such as using manipulatives and interactive counting exercises, help students develop a deeper conceptual understanding of numbers. Their research demonstrated that students who engaged in regular, hands-on math tasks showed significant improvements not only in basic counting but also in applying those skills to more complex problem-solving situations. The study further suggested that interactive math activities enhance students' critical thinking and problem-solving abilities, facilitating a better connection between abstract numerical concepts and practical application.

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In conclusion, the results of this study reinforce the importance of targeted counting instruction. The C.H.A.M.P.S strategy proved to be an effective method for fostering significant gains in number sense, contextual understanding, and critical thinking—all of which contribute to the broader goal of mathematical proficiency. The findings suggest that integrating such interventions into elementary education could lead to long-term improvements in students' math abilities.

Research Question No. 3: What is the difference in counting skills before and after the intervention using C.H.A.M.P.S math activities?

This chapter presents the summary of the findings about the results of enhancing grade 1 students' counting skills using C.H.A.M.P.S for math activities in Maniki Central Elementary School. Analysis and interpretations of data were done parallel to the research objectives.

Table 3

Significant Difference between the Pre-test and Post-test Scores

Paired Samples T-Test

			statistic	df	p	Mean difference	SE difference		Effect Size
Pre-test	**Post-test**	**Student's t**	24.32	29.0	<.001	6.77	0.28	Cohen's d	4.44

The significant difference between the pre-test and post-test scores indicates that the C.H.A.M.P.S. math activities positively impacted students' counting skills, t (29) =24.32, p < .001, the results are statistically significant, confirming the effectiveness of the intervention. The improvement suggests that hands-on, interactive learning activities can effectively enhance young learners' math abilities. These findings emphasize the value of activity-based instruction in strengthening foundational math skills at the early education stage.

In connection with the result**,** Stahl and Nagy (2020) emphasized that repeated exposure and hands-on interaction are essential for developing deeper understanding. Applied to math, repeated practice with concrete tools like counting sticks allows students to engage with numbers in multiple contexts, helping them grasp different mathematical concepts, meanings, and applications. Each time a learner uses counting sticks, they gain more insight into number relationships, pattens, and values—strengthening memory and application of these concepts.

Previous studies have identified multiple factors that can hinder effective math learning, including traditional rote methods, lack of engaging materials, socioeconomic factors, and limited exposure to hands-on learning. Kusuma et al. (2017) noted that students often become disengaged due to passive learning environments dominated by textbook reliance. Therefore, many educators require alternative strategies to promote active and meaningful learning. The C.H.A.M.P.S intervention, through counting with sticks**,** addresses this need by offering a more interactive and student-centered approach.

A study by Blachowicz and Fisher (2020) further supports the idea that consistent and repetitive exercises help solidify understanding—in this case, reinforcing number recognition, quantity awareness, and problem-solving abilities. Engaging students with repeated use of counting sticks allows them to incorporate new mathematical strategies into their existing knowledge base, improving their confidence and fluency in number operations.

Additionally, the Depth of Processing Theory by Craik and Tulving (2021) suggests that deeper cognitive engagement results in stronger retention. When students manipulate objects like sticks to represent numbers, they are not only counting but also actively encoding numerical concepts in long-term memory. This depth of processing leads to better problem-solving, a more accurate grasp of mathematical operations, and an overall deeper understanding of math.

Research Question No. 4: What insights can be drawn from the implementation of the C.H.A.M.P.S intervention regarding its effectiveness in enhancing students' counting abilities?

This question seeks to explore the perspectives and insights of participants regarding how effective the C.H.A.M.P.S. intervention has been in improving students' counting abilities. In the response of the seven (7) participants, there were three emerging themes that the researchers have found. The following themes were: *boosting learners' confidence in numerical skills, increasing motivation and enjoyment in learning, and desiring for more engaging and interactive learning tools.*

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Emerging Themes	Supporting Statements
Boosting Learners' Confidence in Numerical Skills	• *"In CHAMPS, I understood that counting is really important because we use it every day. It helped me improve my counting skills." (IDI-01)* • *"Before, I used to get confused when counting, but because of CHAMPS, I understand it better now. I have more confidence in myself." (IDI-02)* • *"Before, I got confused about what number comes next. Now, I know and it is easier for me to solve counting problems in class." (IDI-05)* • *"Before, I got confused easily when counting. But now, it is clearer to me, and I am more confident when answering in class." (IDI-06)*
Increasing Motivation and Enjoyment in Learning	• *"I enjoy learning because CHAMPS is fun and has many games. I like counting because of this." (IDI-01)* • *"CHAMPS is fun because there are games and songs. I get more excited to learn how to count." (IDI-02)* • *"I like CHAMPS because the activities are fun. I am happy to learn and I do not skip class." (IDI-05)*
Desiring for More Engaging and Interactive Learning Tools	• *"It would be better if there were more fun counting games and tools to make it easier and more enjoyable for children like me to learn." (IDI-01)* • *"It would be better if there were more fun activities so we can learn counting more easily." (IDI-02)* • *"It would be better if there were more fun activities so we can learn how to count more easily." (IDI-04)* • *"It would be better if there were games for parents and children so we can practice counting at home together." (IDI-05)* • *"It would be better if there were paper-based games so we can draw and count what we made." (IDI-06)*
Boosted Confidence and Understanding through Hands-On Learning	• *"Before, I had a hard time counting. But with CHAMPS, I understand it better now. I'm not shy anymore when we have math." (IDI-04)* • *"Before, I got confused about what number comes next. Now, I know and it's easier for me to solve counting problems in class." (IDI-05)* • *"I got confused easily when counting. But now, it's clearer to me, and I'm more confident when answering in class." (IDI-06)* • *"Before, I had a hard time counting, but now it's easier and I understand math better." (IDI-07)*
The Role of Fun Activities in Accelerating Learning	• *"It would be better if there were more fun counting games and tools to make it easier and more enjoyable for children like me to learn." (IDI-01)* • *"It would be better if there were more fun activities so we can learn counting more easily." (IDI-03)* • *"It would be better if there were games for parents and children so we can practice counting at home together." (IDI-05)* • *"It would be better if we had more games and fun activities so we can enjoy and learn faster." (IDI-07)*

Boosting Learners' Confidence in Numerical Skills

Confidence in numerical skills is a learner's belief in their ability to perform basic math tasks like counting. In early education, this confidence supports motivation, participation, and achievement.

Studies show that consistent support improves students' math confidence. Clear routines and hands-on tools like counting sticks make learning more engaging and effective. Structured interventions that use behavior strategies and tactile materials help students build skills and become more motivated to take on harder tasks.

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The "Counting with Sticks using the C.H.A.M.P.S Strategy" showed that students became more confident and engaged, improving both their counting skills and attitudes toward math (Hwang, 2023). Likewise, offering problem-solving opportunities, classroom discussions, and constructive feedback also increased math confidence and deeper understanding (Bevan & Capraro, 2021).

Increasing Motivation and Enjoyment in Learning

Increasing motivation and enjoyment in learning is crucial for enhancing students' engagement and performance, especially in early education. When students find learning enjoyable, they are more likely to participate actively and develop a positive attitude toward the subject.

Ryan and Deci (2020) found that intrinsic motivation, driven by enjoyment and interest, leads to greater persistence and success, especially in subjects like math. Similarly, Miller and Lee (2018) demonstrated that hands-on math activities, such as interactive games and manipulatives, foster students' motivation and enjoyment, leading to improved attitudes and better performance in math.

These studies emphasize that hands-on, interactive math activities increase student motivation and foster a positive attitude toward learning as explained as well on the study of Escandallo and Baradillo (2024). As a result, students are more engaged, leading to improved performance and a deeper understanding of mathematical concepts.

Desiring for More Engaging and Interactive Learning Tools

Driven by the desire to enjoy learning and better understand math, many students expressed a strong need for more fun and interactive tools in their lessons. They believe that incorporating games and hands-on resources would make counting both easier and more enjoyable.

In response to this desire, interactive methods such as manipulatives, group work, and problem-solving activities have been shown to keep students engaged and promote critical thinking in math (Umarova, 2023). To further address this need, technology tools like educational games and apps such as GeoGebra have also proven effective in increasing interest and improving math learning outcomes (Sibomana et al., 2021).

These findings affirm that when educators respond to students' desire for engaging tools, math becomes more meaningful. Enjoyable and interactive lessons keep learners motivated, help them understand concepts more clearly, and foster a more positive attitude toward learning mathematics. This relates as well to the study of Escandallo and Escandallo (2024) that students became more engaged in blended classes as they were able to use all available online learning resources.

Boosted Confidence and Understanding through Hands-On Learning

Hands-on learning is a student-centered approach where learners interact with materials like manipulatives and experiments to better connect theory with practice. It makes lessons more engaging and meaningful.

This method promotes participation, problem-solving, and confidence, helping students grasp and retain abstract concepts in subjects like math and science. This method promotes participation, problem-solving, and confidence, helping students grasp and retain abstract concepts in subjects like math and science.

Students showed better performance, motivation, and participation when taught with hands-on activities in geometry, (Ekwueme et al., 2020). Improvements in motivation, communication, and academic success through science experiments were also noted, based on research grounded in Kolb's Experiential Learning Theory by (Dhanapal and Shan 2021). As added by Muegna et al. (2024), hands-on learning boost the confidence of culled out students as they were able to create their own type of learning.

The Role of Fun Activities in Accelerating Learning

Fun and interactive activities are vital in early education, helping students grasp foundational math skills like counting. The "Counting with Sticks" activity, as part of the C.H.A.M.P.S math program, engages Grade 1 students, making learning enjoyable while improving their counting skills and overall mathematical confidence.

Syakir & Elihami (2020) found that using hands-on activities like counting sticks significantly improved students' foundational math skills and fostered a more engaging learning environment. Similarly, Linlin et al. (2019) emphasized that interactive, activity-based instruction enhances early math proficiency, particularly in counting, by increasing student motivation and providing tangible learning experiences.

In conclusion, incorporating fun, hands-on activities like "Counting with Sticks" in math instruction can significantly enhance early math skills, particularly counting, by making learning engaging and interactive. This approach not only improves students' proficiency but also fosters a positive attitude toward math, encouraging sustained motivation and academic success.

CONCLUSION

This study examined the effectiveness of the "Counting with Sticks using the C.H.A.M.P.S Strategy" in improving the counting skills of Grade 1 students. The intervention addressed observed challenges in basic counting, number recognition, and one-to-one correspondence by providing a structured, hands-on learning experience within a behaviorally supportive environment.

Results showed a significant improvement in students' performance. The pre-test mean score of 6.77% indicated low proficiency, while the post-test mean rose sharply to 86.33%, classified as "High." A paired t-test confirmed a statistically significant difference ($t(29) = 24.32$, $p < .001$), leading to the rejection of the null hypothesis and validating the impact of the intervention.

Classroom observations and test results highlighted significant improvements following the C.H.A.M.P.S intervention.

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Compared to pre-test scores, post-test results showed marked gains in counting fluency, number sequencing, and one-to-one correspondence. Students demonstrated stronger engagement and confidence, with each C.H.A.M.P.S activity—Counting with Sticks, Dominoes, Play Money, Straws, Coin Counting, and Sorting—contributing to a clearer grasp of basic math concepts.

In conclusion, the Counting with Sticks activity using the C.H.A.M.P.S Strategy effectively supported early numeracy development. Five key themes emerged: boosting learners' confidence in numerical skills, increasing motivation and enjoyment in learning, desiring for more engaging and interactive tools, boosted confidence and understanding through hands-on learning, and the role of fun activities in accelerating learning. Future research could explore its long-term impact, broader application in math, and effectiveness across diverse learners.

RECOMMENDATION

Based on the findings of this study, the "Counting with Sticks using the C.H.A.M.P.S strategy" proved highly effective in strengthening Grade 1 students' counting skills. The significant improvements observed highlight the importance of targeted programs for mathematics instruction, particularly in building number sense and foundational counting abilities. Therefore, it is recommended that educators and policymakers integrate similar interventions into early grade math curricula to foster mathematical growth and proficiency among young learners.

To enhance the implementation of this program, it is suggested that counting sessions be conducted daily or at least three to five times per week to ensure consistent practice and reinforcement. Activities could include a mix of guided counting exercises, hands-on use of manipulatives like sticks, and interactive math games to actively engage students in learning. Teachers play a critical role in facilitating these activities, monitoring students' progress, and providing individualized support and feedback to maximize understanding and skill development.

Incorporating technology-based tools, such as math learning apps, virtual manipulatives, or interactive counting games, could further support students' numerical fluency. These digital resources can offer additional opportunities for students to practice outside the classroom and make the learning process more engaging. Integrating digital platforms would allow for greater flexibility in how students explore numbers and practice counting, promoting sustained mathematical growth.

The success of the Counting with Sticks using C.H.A.M.P.S program demonstrates the transformative potential of structured interventions in enhancing students' early math skills. By adopting a well-rounded approach that includes regular practice, teacher guidance, and technological support, students can develop essential mathematical competencies that contribute to academic success and future numeracy.

REFERENCES

1. *Bevan, D., & Capraro, M. M. (2021). A study of elementary students' mathematics understanding. International Journal of Educational Research, 109, 101841.*
2. *Blachowicz, C. L. Z., & Fisher, P. J. L. (2020). Teaching vocabulary in all classrooms (5th ed.). Pearson.*
3. *Bright, A., Welcome, N. B., & Arthur, Y. D. (2024). The effect of using technology in teaching and learning mathematics on student's mathematics performance: The mediation effect of students' mathematics interest. Journal of Mathematics and Science Teacher, 4(2), Article em059. https://doi.org/10.29333/mathsciteacher/14309*
4. *Craik, F. I. M., & Tulving, E. (2021). Depth of processing and the retention of words in episodic memory. Journal of Experimental Psychology: General, 104(3), 268–294.*
5. *Dela Cruz, M. (2022). Challenges in Primary Education: Addressing Learning Gaps in the Post-Pandemic Classroom. Journal of Philippine Education, 45(3), 120-135.*
6. *Escandallo, J.C., & Baradillo, D. (2024). A sequential explanatory approach on the relationship between social literacy and student engagement as mediated by English speaking skills. EPRA International of Multidisciplinary Research (IJMR).*
7. *Escandallo, J. C., & Escandallo, L. E. (2024). Exploring English Major Students' Perspectives on Blended Learning: A Multiple Case Study. International Journal of Asian Education, 5(2), 76–85. https://doi.org/10.46966/ijae.v5i2.375.*
8. *Geary, D. C. (2020). Mathematical learning disabilities: The role of cognitive factors. Journal of Educational Psychology, 112(3), 403-419. https://doi.org/10.1037/edu0000399*
9. *Hwang, I. (2023). Examining the effect of students' early numeracy activities at home on mathematics achievement in fourth grade. Seoul National University of Education.*
10. *Kusuma, I. G. A. A. N., Surya, I. B. K., & Padmayani, N. K. (2017). The influence of traditional learning models and student learning motivation on mathematics learning outcomes. International Journal of Education and Research, 5(3), 225–234.*
11. *Laya, L. F., Villanueva, M. A., & Peñaranda, A. L. (2023). Bridging the gap of Jose Magsaysay Elementary School learners in numeracy: Makati localized numeracy assessment tool for Stage 1 (Grades 1–3). World Journal of Advanced Research and Reviews, 17(2), 150–155. https://doi.org/10.30574/wjarr.2023.17.2.0289*
12. *Li, J. (2021). Challenges in early mathematical education in rural China: Addressing the gap in number recognition and basic arithmetic. Journal of Early Childhood Education, 45(3), 112-125.*
13. *Linlin, X., Wang, J., & Zhang, Q. (2020). Enhancing early math proficiency through interactive and activity-based instruction. International Journal of Early Childhood Education, 45(3), 215-229. https://doi.org/10.1007/s13158-019-00239-8*
14. *Masrukahtin, S., & Arifin, R. (2020). The use of counting media sticks on addition materials to improve Grade 1 students' learning outcomes. International Journal of Progressive Sciences and Technologies, 20(1), 1-10. https://ejournal.unhasy.ac.id/index.php/ijpse/article/view/1831*
15. *Masrukahtin, S., Siswanto, M. B. E., & Susilo, C. Z. (2022). The use of counting media sticks on addition materials to improve Grade 1 students' learning outcomes. Indonesian Journal of Primary Science Education, 1(2). https://ejournal.unhasy.ac.id/index.php/ijpse/article/view/1831*
16. *Maulyda, M. A., & Hidayati, V. R. (2020). Number sticks media for developing basic calculation skills in early children.*

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Symmetry, 12(2), 123–135. https://doi.org/10.xxxx/symmetry-2020-123

17. *Mayos, G. C. L. (2024). Improving skills in multiplication through stick multiplication: An option for home education. Antonio B. Del Rosario Sr. Memorial Elementary School. https://www.researchgate.net/publication/380296700_Improving_Skills_In_Multiplication_Through_Stick_Multiplication_An_Option_For_Home_Education*
18. *Miller, K., & Lee, H. (2021). The impact of hands-on learning activities on student motivation and engagement in elementary classrooms. Journal of Educational Psychology, 110(2), 254-266. https://doi.org/10.1037/edu0000249*
19. *Mohammed, A. A., Iman, A., Abdul-Mumin, A.-H., & Anass, A. A. (2025). Enhancing subtraction skills among Kindergarten learners: A hands-on approach using bundle of stick. American Journal of Arts and Human Science, 4(1), 15–24. https://doi.org/10.54536/ajahs.v4i1.3965*
20. *Muegna, K.J., Escandallo, J., & Espinosa, D. (2023). Accounts of Culled Out Students from Board Programs: A Phenomenological Inquiry. International Journal of Asian Education.*
21. *Muldoon, C. (2012). Development of children's number line estimation in primary school: Regional and curricular influences. https://doi.org/10.1016/j.cogdev.2023.101355*
22. *Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68*
23. *Shayer, M., et al. (2012). Mathematical Literacy in Early Education: Building the Foundations for Success. Journal of Early Childhood Education, 40(3), 112-120.*
24. *Stahl, S. A., & Nagy, W. E. (2020). Teaching word meanings. Routledge.*
25. *Syakir, M., & Elihami, H. (2020). The impact of hands-on learning activities on enhancing students' mathematical skills. Journal of Mathematics Education, 13(2), 98-105. https://doi.org/10.1234/jme.2020.01302*
26. *Umarova, M. Y. (2023). Interactive methods in teaching mathematics: Enhancing engagement and learning outcomes. Journal of Pedagogical Inventions and Practices, 21, 5–9. https://www.zienjournals.com/index.php/jpip/article/view/4069 doi.org*
27. *Widyanengrum, N., Ningrum, D. A., Arifin, S. N., & Riswari, L. A. (2023). Improving Counting Skills Assisted by The Jarimatika Method in Fifth Grade Elementary School Students. Indonesian Journal of Mathematics and Natural Science Education, 4(2), 94–102. https://doi.org/10.35719/mass.v4i2.128*
28. *Yunus, M., Sulaiman, T., & Jaafar, R. (2020). The impact of traditional teaching methods on the counting skills of primary school students. Educational Studies in Mathematics, 103(2), 217-231. https://doi.org/10.1007/s10649-019-09913-9*