EFFECTIVENESS OF TEACHING STRATEGIES AMONG KINDERGARTEN TEACHERS

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ABSTRACT

This study investigates the effectiveness of various teaching strategies utilized by kindergarten teachers within Districts 1 and 2 of Tandag City, Surigao del Sur, Philippines. Centered on enhancing early childhood education, the research aims to evaluate four key pedagogical approaches—interactive learning, hands-on activities, group discussions, and creative projects—in fostering foundational skills in young learners. Employing a descriptive-correlational quantitative research design, data were collected through validated questionnaires administered to all 37 kindergarten teachers across 25 schools. Grounded in multiple learning theories including Cognitive Development Theory (Piaget), Social Constructivism (Vygotsky), and Communication Theory of Teaching (Scudder), the study assesses both implementation levels and effectiveness perceptions. Findings reveal that interactive learning is the most consistently and effectively applied strategy, followed by hands-on activities, group discussions, and creative projects. While teachers acknowledge the high impact of hands-on and interactive approaches, creative projects, though effective, remain underutilized due to resources and time constraints. Statistical analysis using Pearson correlation shows significant relationships between the effectiveness of teaching strategies and their level of implementation. Additionally, demographic factors such as gender and age correlate significantly with the adoption of specific strategies, indicating the influence of teacher background on pedagogical preferences. This research underscores the need for targeted professional development and institutional support to enhance strategy implementation, particularly in creative pedagogies. It also proposes a structured intervention program aimed at empowering educators through training, mentoring, and collaborative planning to optimize teaching efficacy and promote inclusive, student-centered learning environments in early education.

Keyword: *Teaching strategies, interactive learning, hands-on activities, group discussions, and creative projects.*

1. INTRODUCTION

Teaching strategies play a vital role in shaping early childhood education, especially at the kindergarten level, where foundational skills are developed. Kindergarten teachers serve as guides in a child's first formal learning journey, crafting meaningful experiences that foster intellectual, emotional, and social growth. This study, titled "Effectiveness of Teaching Strategies Among Kindergarten Teachers," explores which strategies are most effective in engaging young learners in the Tandag 1 and 2 Districts of Tandag City, Surigao del Sur.

Rooted in the belief that effective pedagogy enhances learning outcomes, the study emphasizes the necessity of ongoing professional development and carefully designed teaching resources to support 21st-century teaching competencies. For example, Lee and Ginsburg (2020) discovered that practical exercises improve cognitive abilities, while Torres and Ramirez (2021) demonstrated that group discussions improve social and linguistic development. Kim and Lim (2022) emphasized creative projects for fostering collaboration and problem-solving, and Davis and Moore (2023) highlighted how interactive methods increase motivation. Zhang and Wu (2024) confirmed these strategies improve engagement and learning across diverse classrooms.

The Kindergarten Education Act (RA 10157) and the Enhanced Basic Education Act of 2013 (RA 10533) both emphasize the significance of early childhood education in the Philippine educational system. However, there

remains limited clarity about which teaching methods are most effective for fostering learning in kindergarten students. Many studies have focused only on kindergarten-level children, and limited studies compare which teaching strategies are most effective across the three focus areas of learning: language and social skills, math, and science and technology skills. Contextual factors such as teacher training, classroom size, and resources are often overlooked. Many research studies use self-reporting rather than data from children who are observed. There is no evidence that teaching strategies beyond kindergarten have a long-term impact on their progress.

Furthermore, the exploration of key factors influencing the challenging teaching environment, considering the geographical context, addresses a research gap, seeking to optimize teaching strategies for diverse settings. Findings from this study may assist teachers to improve their practices, school leaders might develop training and support for staff, and policy makers might encourage early education programs.

2. METHODOLOGY

2.1 Research Design

This study employed a quantitative approach, specifically using a descriptive-correlational research design. This type of design is used to describe the characteristics of variables and investigate the relationships between independent and dependent variables. It aims to provide a better understanding of the variables involved, explore their connections, and identify emerging patterns or trends within the data (Seeram, 2019).

2.2 Research Locale

The study was conducted in Districts 1 and 2, Division of Tandag City, Tandag City, Surigao del Sur. This place was selected for knowing effective teaching strategies for kindergarten learners. It has twenty-five schools with thirty-seven teachers handling kindergarten learners: San Antonio Elementary School, Buenavista Elementary School, Salvacion Elementary School, Pangi Elementary School, San Agustin Elementary School, Awasian Elementary School, Quezon Elementary School, Nestor Ty Memorial Elementary School, Bongtud Elementary School, Bioto Elementary School, and Tandag Pilot Elementary School. And District 2 composed of Pag-asa Integrated School, Mabuhay Integrated School, Mahanon Elementary School, Pandanon Elementary School, San Isidro Elementary School, San Jose Elementary School, Tandag Central Elementary School, Tandag City SPED Center, Tandag Special Science Elementary School, Quintos Elementary School, and Rosario Integrated School. The researcher selected the study location based on its ability to provide relevant information, as it features a diverse population of learners influenced by both urban and rural settings. The research was carried out during the second quarter of the 2023–2024 academic year.

2.3 Respondents

The respondents in this research study were the kindergarten teachers in Tandag Districts 1 and 2, and universal sampling or complete enumeration was utilized since the population size was relatively small and manageable. It may be feasible and practical to include the entire population in the study.

2.3 Research Instrument

The study utilized a researcher-designed questionnaire, which underwent validity and reliability testing to ensure the accuracy and consistency of the instrument. It used a 5-point-Likert scale to capture the responses of the respondents.

Part I is the profile of the respondents, which includes demographic and professional information from respondents. It includes optional details such as name and school, along with gender, age, and length of teaching service, which help analyze variations in pedagogical practices. It also gathers data on training and seminar attendance across different levels of professional development. This section provides context for understanding how respondent characteristics influence the use and effectiveness of teaching strategies.

Part II is designed to capture the level of implementation of the teaching strategy on how often teachers use specific strategies. It covers interactive learning, hands-on activities, group discussions, and creative projects. With the adjectival rating as fully implemented, moderately implemented, implemented and not implemented. These

strategies promote engagement, collaboration, and creativity through real-world tasks, simulations, discussions, and imaginative activities. The tool supports evaluation and improvement of teaching practices.

Part III gauges the level of effectiveness of four teaching: interactive learning, hands-on activities, group discussions, and creative projects. It measures their impact on student performance, engagement, critical thinking, retention, inclusivity, and teachers' confidence in facilitating these methods. This section provides insight into how well these strategies enhance learning outcomes and classroom effectiveness.

Part IV is about identifying the challenges kindergarten teachers face when implementing various teaching strategies. It covers four key areas: interactive learning, hands-on activities, group discussions, and creative projects. Common issues include lack of materials and resources, time constraints, managing large or diverse classes, student behavior and participation, and limited institutional support. This section aims to highlight practical barriers that hinder effective teaching, helping to inform improvements in instructional planning and resource allocation.

2.4 Statistical Treatment

The results were statistically treated as highly reliable and consistent, henceforth, the following tools were used to treat the data:

The mean and standard deviation were utilized to define the parameters related to the level of teaching strategies in the study. Meanwhile, the Pearson product-moment correlation was employed to examine the significant relationship between the dependent and independent variables.

To address Problem 1, frequency and percentage distributions were used to describe the participants' profiles. Frequency refers to how often a specific value or category appears within a dataset, making it useful for analyzing and summarizing categorical data that is organized into distinct groups or categories (Luliano et al., 2019).

For Problems 2, 3, and 4, the data were analyzed using weighted mean and standard deviation. The weighted mean provides an average that accounts for varying importance of data points, while the standard deviation measures how spread out the values are around the mean, calculated as the square root of the variance (Luliano et al., 2019).

For Problems 5 and 6, the Pearson product-moment correlation was applied to assess the significance of the relationship between variables. This statistical measure summarizes key features of a dataset by indicating both the strength and direction of the linear association between two numerical variables (Luliano et al., 2019).

3. RESULTS AND DISCUSSION

This chapter presents the findings after the previous chapter discusses the researcher's research methodology for collecting and evaluating the data. It analyzed the study's provided result and examined the study's stated outcome; descriptive statistics were presented. The research findings were also discussed in the concluding section of this chapter.

3.1 Level of Implementation of the Teaching Strategies of Kindergarten

The results presented in table 1 reveal varying levels of implementation across four key teaching strategies: interactive learning, hands-on activities, group discussion, and creative projects among kindergarten teachers. This variation indicates differences in how frequently and effectively these strategies are applied in the classroom, reflecting the teachers' preferences, training, and classroom contexts. Understanding these variations can help identify areas for professional development and inform targeted interventions to enhance teaching effectiveness in early childhood education.

Table 1: Level of Implementation of Teaching Strategy

Indicators	Weighted Mean	Adjectival Rating
A. Interactive Learning I…		
set a real word problem as one way of making learning more meaningful.	3.76	Fully Implemented
used teaching aids to gain and retain attention.	3.73	Fully Implemented
engaged learners in learning activities that lead to higher levels of understanding.	3.68	Fully Implemented
used questions to stimulate discussion, emphasizing the value of answers.	3.68	Fully Implemented
encouraged the learner's active participation on the content and the facilitator.	3.65	Fully Implemented
prepared differentiated activities to help the learners stay interested and to cater to their differences.	3.51	Fully Implemented
do brainstorming to boost the learner's readiness for the lesson before the class starts.	3.51	Fully Implemented
encouraged my learners to revisit their previous learnings on the topic and to give their getaways prior to the next lesson.	3.46	Fully Implemented
Mean	3.62	Fully Implemented
B. Hands-on Activities I…		
started by identifying the learning goals and objectives for your lesson.	3.7	Moderately Implemented
looked for opportunities to make connections to real-world experiences like field trips or any authentic experiences.	3.65	Fully Implemented
incorporated activities that allow learners to engage actively with the material this could be through simulation or role-playing.	3.51	Fully Implemented
encouraged learners to ask questions and explore their own interests.	3.49	Moderately Implemented
helped my learners to embrace their mistakes and use them as learning opportunities.	3.43	Moderately Implemented
encouraged my learners to think about what they learned and express it in the form of drawing.	3.32	Moderately Implemented
used manipulative materials and let them engage to present my lesson for more concrete.	3.3	Moderately Implemented
incorporated music and movement into lessons can make learning more fun and engaging. For example, a song about the parts of a plant, complete with actions, can help learners remember the information.	3.22	Moderately Implemented
Mean	3.45	Moderately Implemented
C. Group Discussion I…		
organized the learners to work in small groups and share their response.	3.59	Fully Implemented
encouraged all the learners to participate in the group discussion and each member has given them a chance to talk.	3.54	Fully Implemented
let the learners to engage the ideas to achieve their goals.	3.51	Fully Implemented
gave more specific instruction to the learners in assigning the task, for them to succeed at it consider the protocols for tasks such as Think-Pair-Share.	3.51	Fully Implemented
gave appropriate and not embarrassing rules the class agreed on.	3.51	Fully Implemented
developed a clear goal and objectives for discussion.	3.46	Moderately Implemented
never shamed or humiliated a learner for their misbehavior during the group discussions.	3.43	Moderately Implemented
started with expository questions to clarify the facts, then move to analysis, and finally to evaluation, judgment, and recommendations.	3.22	Moderately Implemented

Mean	3.47	Moderately Implemented
D. Creative Projects I…		
let my learners to build and decorate a cubby house out of cardboard boxes or natural materials like tree branches.	3.41	Fully Implemented
allowed learners to make their own unique letter mosaic out of paper scratch.	3.19	Moderately Implemented
gave the learners a large cardboard box and they can come up with robot costume, plane, puppet theatre and so on.	3.16	Moderately Implemented
let my learners assemble a leaf person out of the provided leaves and twigs that we had gathered outside.	2.86	Moderately Implemented
allowed learners go on a nature walk and take nature photographs, they can create a story, photo album or map with the photos.	2.68	Moderately Implemented
provided the learners tools to touch things like playdough for them to create their favorite pet.	2.65	Moderately Implemented
made used toys to make and tools to introduce basic mathematics.	2.59	Moderately Implemented
gathered the learners to play games that involve guessing and acting, like charades and pictionary and they can also make up their own set of flashcards with words to act out or draw.	2.51	Moderately Implemented
Mean	2.88	Moderately Implemented
Overall Mean	3.36	Moderately Implemented

Table 1 reflects the interactive learning that emerged as the most implemented strategy, with a weighted mean of 3.62, indicating it is fully implemented. Notably, the highest-rated indicators within this category include "setting a real-world problem to make learning more meaningful" (3.76), "using teaching aids to gain and retain attention" (3.73), and "engaging learners in activities that lead to higher levels of understanding" (3.68). These results affirm that teachers are actively creating engaging and meaningful learning experiences for their students.

Contemporary research supports this emphasis on interactivity; according to Alshammari (2020), interactive teaching fosters higher-order thinking and deeper comprehension by encouraging learners to connect abstract concepts to real-life situations. Similarly, Foulger et al. (2021) highlight that when students are actively involved in constructing knowledge, especially through real-world applications, their cognitive engagement and academic performance significantly improve.

In contrast, the creative projects category received the lowest mean score of 2.88, classified as moderately implemented. The least implemented indicator was "allowing learners to create their own flashcards with words to act out or draw," which scored only 2.51. Other creative activities, such as nature walks, using playdough to model ideas, and storytelling, also had relatively low implementation rates.

This suggests that while teachers recognize the importance of creative expression, such strategies may be underutilized due to constraints such as time, resources, or limited training in facilitating open-ended activities. This finding is concerning, as recent studies underscore the crucial role of creativity in 21st-century learning.

According to Craft et al. (2022), creative teaching practices support not only academic learning but also social-emotional development, collaboration, and innovation—skills highly valued in modern education. Additionally, Torres and Gist (2021) emphasize that creative learning environments are especially beneficial in early childhood education, as they provide opportunities for exploration, imagination, and self-expression.

3.2 Level of Effectiveness of the Teaching Strategies to the Learners

The next table presents an insightful overview of how teachers perceive the effectiveness of various teaching strategies in promoting student learning and academic performance. These perceptions are based on observed

improvements in learners' engagement, comprehension, creativity, collaboration, and overall development. Moreover, understanding these effectiveness levels can guide future instructional planning and the refinement of teaching practices to better meet the developmental needs of kindergarten learners.

Table 2: Level of Effectiveness of Teaching Strategy

Indicators	Weighted Mean	Adjectival Rating
A. Interactive Learning I…		
observed a positive correlation between the use of interactive learning and my students' overall academic performance.	4.65	Strongly Agree
used interactive learning that helps in developing critical thinking skills among my students.	4.59	Strongly Agree
used interactive learning activities to foster a more positive and inclusive classroom environment.	4.59	Strongly Agree
incorporated interactive elements into my lessons encourages active participation and engagement among students.	4.46	Agree
believed that interactive learning strategies cater to diverse learning styles in my classroom.	4.46	Agree
integrated technology in interactive learning positively impacts my students' overall learning experience.	4.46	Agree
find that incorporating interactive activities into my lessons improves students' retention of information.	4.41	Agree
used interactive learning strategies enhances my students' understanding of the subject matter.	4.35	Agree
engaged students in group discussions and collaborative projects enhance their ability to apply theoretical concepts.	4.35	Agree
Mean	4.48	Agree
B. Hands-on Activities I…		
incorporated hands-on activities to contribute positively to my students' overall learning experience.	4.62	Strongly Agree
incorporated hands-on activities into my lessons improves students' retention of information.	4.57	Strongly Agree
used of hands-on activities enhances my students' understanding of the subject matter.	4.54	Strongly Agree
incorporated hands-on activities to help in developing critical thinking skills among my students.	4.54	Strongly Agree
observed a positive correlation between the use of hands-on activities and my students' overall academic performance.	4.54	Strongly Agree
used hands-on activities to foster a more positive and inclusive classroom environment.	4.51	Strongly Agree
believed that hands-on activities cater to diverse learning styles in my classroom.	4.51	Strongly Agree
incorporated hands-on elements into my lessons encourages active participation and engagement among students.	4.51	Strongly Agree
am confident in my ability to effectively implement hands-on activities in my teaching practices.	4.51	Strongly Agree
engaged students in hands-on projects to enhance their ability to apply theoretical concepts.	4.41	Agree
Mean	4.53	Strongly Agree
C. Group Discussion I…		
am confident in my ability to effectively facilitate group discussions in my teaching practices.	4.46	Agree
used group discussions to help in developing critical thinking skills among my	4.38	Agree

students.		
incorporated group discussions into my lessons to encourage active participation and engagement among students.	4.38	Agree
engaged students in group discussions enhance their ability to apply theoretical concepts.	4.35	Agree
believed that group discussions cater to diverse learning styles in my classroom.	4.35	Agree
incorporated group discussions into my lessons improves students' retention of information.	4.32	Agree
used group discussions to enhance my students' understanding of the subject matter.	4.3	Agree
used group discussions to contribute positively to my students' overall learning experience.	4.22	Agree
used group discussions to foster a more positive and inclusive classroom environment.	4.19	Agree
observed a positive correlation between the use of group discussions and my students' overall academic performance.	4.16	Agree
Mean	4.31	Agree
D. Creative Projects I…		
believed that creative projects cater to diverse learning styles in my classroom.	4.32	Agree
am confident in my ability to effectively implement creative projects in my teaching practices.	4.32	Agree
used creative projects to help in developing critical thinking skills among my students.	4.32	Agree
used creative projects to contribute positively to my students' overall learning experience.	4.24	Agree
used creative projects to foster a more positive and inclusive classroom environment.	4.24	Agree
incorporated creative projects into my lessons to encourage active participation and engagement among students.	4.24	Agree
incorporated creative projects into my lessons to improve students' retention of information.	4.22	Agree
observed a positive correlation between the use of hands-on activities and my students' overall academic performance.	4.22	Agree
used creative projects to enhance my students' understanding of the subject matter.	4.19	Agree
Mean	4.26	Agree
Overall Mean	4.39	Agree

Table 2 shows the level of effectiveness of teaching strategies among the four categories evaluated—interactive learning, hands-on activities, group discussion, and creative projects. The strategy rated very effective overall was hands-on activities, with a weighted mean of 4.53, categorized as strongly agree. The highest individual item was also under this category: "I incorporated hands-on activities to contribute positively to my students' overall learning experience" scored 4.62, indicating strong teacher belief in the impact of experiential learning on student outcomes.

This aligns with recent findings by Adom and Asare (2021), who emphasized that hands-on and experiential activities deepen understanding and improve long-term retention by engaging learners in authentic, sensory-rich experiences. Additionally, Kim et al. (2020) noted that such activities are especially effective in developing critical thinking and collaborative problem-solving skills in diverse classrooms.

The lowest scoring strategy in terms of effectiveness was creative projects, which received a mean of 4.26, still falling within the agreed range. The lowest rated indicator was "used creative projects to enhance my students' understanding of the subject matter" (4.19). Although this suggests teachers recognize some effectiveness in creative strategies, there is a noticeable dip in confidence compared to other teaching approaches. This could be attributed to challenges in assessing creativity, aligning projects with learning outcomes, or lack of training.

However, contemporary literature continues to highlight the importance of creativity in education. For instance, Tan and Majid (2021) assert that creative projects not only deepen understanding but also cultivate emotional intelligence, adaptability, and innovation—essential skills for future-ready learners. Moreover, Rojas and Li (2020) emphasized the role of creative learning in promoting inclusivity and differentiated instruction, particularly in early childhood and primary education.

3.3 Significant Relationships between the Profile of the Respondents and the Level of Effectiveness of the Teaching Strategies

The table below shows the relationship between the profile of the respondents and the level of effectiveness of the teaching strategies: interactive learning, hands-on activities, group discussions, and creative projects.

Table 3: Significant Relationship between the Profile of the Respondents and the Level of Effectiveness of the Teaching Strategies

Variable Tested		Computed r	p-value	Conclusion
Sex	Interactive Learning	0.453	0.005	Significant
	Hands-on Activities	0.267	0.110	Not Significant
	Group Discussions	0.325	0.049	Significant
	Creative Projects	0.194	0.240	Not Significant
Age	Interactive Learning	0.123	0.467	Not Significant
	Hands-on Activities	0.162	0.337	Not Significant
	Group Discussions	0.137	0.420	Not Significant
	Creative Projects	0.354	0.030	Significant
Length of Service	Interactive Learning	0.112	0.510	Not Significant
	Hands-on Activities	0.188	0.266	Not Significant
	Group Discussions	0.254	0.129	Not Significant
	Creative Projects	0.287	0.085	Not Significant
Seminars/Trainings Attended	Interactive Learning	0.267	0.523	Not Significant
	Hands-on Activities	0.251	0.548	Not Significant
	Group Discussions	0.708	0.49	Not Significant
	Creative Projects	0.324	0.0433	Significant

*Correlation is significant at the 0.05 level (2-tailed).
Legend: p<.05 is Significant and p>.05 is not Significant

Table 3, shows that sex has significant relationship in terms of interactive and group discussion teaching strategy, having a coefficient value r = 0.453 at p-value of 0.005 indicates a positive relationship as female is more fun on implementing interactive and group discussion teaching strategy than male. Age shows to have a significant relationship in terms of creative projects teaching strategy having a coefficient value r = 0.354 at p-value of 0.005 indicates a positive relationship teacher in the Middle Ages (30 – 39 years old) is said to be more creative or use creative projects teaching strategy than any other age.

Seminars and training shown a significant relationship in terms of creative projects having a coefficient value r = 0.354 at p-value of 0.005 indicates a positive relationship teacher who is trained and attended seminars is said to have engage or use creative project teaching strategy.

Sex has a significant relationship with the use of interactive and group discussion teaching strategies, where female teachers tend to use these strategies more than their male counterparts. The positive correlation suggests that female teachers might be more inclined or more comfortable using interactive and group discussion strategies in the classroom. These strategies require high levels of communication, engagement, and collaboration, which could be perceived as areas where female teachers may excel. Previous studies, such as Dee (2020), have found that women in teaching roles tend to employ more collaborative and communicative strategies, which could explain the higher engagement with interactive activities. However, it is important to note that this relationship does not imply causation, and further research is necessary to explore why this trend exists.

Age (specifically teachers aged 30-39 years) shows a positive relationship with the implementation of creative projects, indicating that teachers in this age group are more inclined to adopt creative project-based teaching strategies. Teachers in the 30-39 age range may have a balance of experience and innovative thinking that encourages the use of creative projects. This could be because they have acquired sufficient teaching experience, which allows them to confidently implement more complex and resource-intensive strategies like creative projects. Additionally, this age group may still be highly motivated to try new methods and engage students in creative ways. Scholars like Penuel et al. (2021) emphasize that teachers with a solid base of experience and a willingness to adopt innovative approaches tend to implement project-based and creative learning strategies more effectively.

Seminars and training attendance also significantly influences the use of creative projects, suggesting that professional development opportunities play a crucial role in encouraging teachers to implement more innovative and engaging teaching strategies. Teachers who participate in seminars and professional development training are often exposed to the latest pedagogical strategies, including creative and project-based learning. These training courses may offer new insights, tools, and techniques for engaging students in creative ways, which teachers are then able to apply in their classrooms. According to Darling-Hammond et al. (2020), continuous professional development plays a key role in improving teaching effectiveness. Teachers who attend such events may also feel more empowered and confident in their ability to use innovative strategies like creative projects, which are often highlighted in professional development sessions focused on active and student-centered learning.

3.4 Significant Relationship between Effective Teaching Strategies and the Level of Implementation

The table below shows the relationship between effective teaching strategies and the level of implementation of the four teaching strategies.

Table 4: Significant Relationship between Effective Teaching Strategies and the Level of Implementation

Variable Tested		Computed r	p-value	Conclusion
Effectiveness on Teaching Strategy on Interactive Learning	Interactive Learning	0.942	0.000	Significant
	Hands-on Activities	0.941	0.000	Significant
	Group Discussions	0.666	0.000	Significant
	Creative Projects	0.520	0.001	Significant
Effectiveness on Teaching Strategy on Hand-on activities	Interactive Learning	0.716	0.000	Significant
	Hands-on Activities	0.732	0.000	Significant
	Group Discussions	0.798	0.000	Significant
	Creative Projects	0.565	0.000	Significant
Effectiveness on Teaching Strategy on Group Discussion	Interactive Learning	0.748	0.000	Significant
	Hands-on Activities	0.754	0.000	Significant
	Group Discussions	0.804	0.000	Significant
	Creative Projects	0.580	0.000	Significant
Effectiveness in Teaching Strategy on Creative Projects	Interactive Learning	0.382	0.020	Significant
	Hands-on Activities	0.459	0.004	Significant
	Group Discussions	0.341	0.039	Significant
	Creative Projects	0.318	0.055	Not Significant

*Correlation is significant at the 0.05 level (2-tailed).
Legend: p<.05 is Significant and p>.05 is not Significant

Table 4 demonstrates a significant correlation between effective teaching strategies and their level of implementation. The data indicates that the success of implementing interactive learning strategies significantly impacts the effectiveness of these methods. Specifically, interactive learning, hands-on activities, group discussions, and creative projects show coefficient values of r = 0.942, 0.941, 0.666, and 0.520, with p-values of 0.000, 0.000, 0.000, and 0.001, respectively. This suggests a strong positive relationship between the use of interactive teaching strategies and their successful implementation. Wenderoth, (2019) effective teaching strategies, encompassing concepts such as spaced repetition, active learning, interleaved practice, mind mapping, self-testing, and the critical role of feedback.

Moreover, it indicates that the success of implementing hands-on activities teaching strategies significantly influences their effectiveness. Specifically, interactive learning, hands-on activities, group discussions, and creative projects show correlation coefficients of r = 0.716, 0.732, 0.798, and 0.565, respectively, with all p-values at 0.000. This demonstrates a strong positive relationship between the use of hands-on teaching strategies and their successful implementation, as supported by Cama's (2018) study. Effective implementation requires knowledge and skills to combine activities in ways that promote children's growth and development, and to adjust activities to align with children's developmental continuum. Many learning experiences also require teachers to have subject matter knowledge and pedagogical skills to enhance children's learning.

Vygotsky (1978) emphasized another crucial pedagogical theory related to hands-on learning: the "zone of proximal development." This theory, which also applies to technological activities in preschool, aims to find the appropriate link between learning and child development. Vygotsky suggested that the tasks children can successfully complete with adult assistance reflect their cognitive abilities.

The success of implementing Group Discussion teaching strategies significantly affects their effectiveness. Specifically, interactive learning, hands-on activities, group discussions, and creative projects have correlation coefficients of r = 0.748, 0.754, 0.804, and 0.580, respectively, with all p-values at 0.000. This indicates a strong positive relationship between the use of Group Discussion Teaching strategies and their successful implementation. According to Syawaludin et al. (201), group discussions enhance various learning and literacy domains influenced by questioning, including critical thinking, reading comprehension, writing ability, subject matter learning, metacognition, teacher development, vicarious learning, scaffold learning processes, and dialogic literary inquiry.

Similarly, the success of implementing creative projects teaching strategies significantly influences their effectiveness. Specifically, interactive learning, hands-on activities, and group discussions have correlation coefficients of r = 0.382, 0.459, and 0.341, with p-values of 0.020, 0.004, and 0.039, respectively. This indicates a strong positive relationship between the use of creative projects teaching strategies and their successful implementation. According to Purnomo et al. (2019), project-based collaborative learning fosters efficient, independent, and active learning. Liew et al. (2018) suggest that careful planning of teaching and learning strategies can enhance the learning experience and outcomes.

4. CONCLUSIONS

The conclusions derived from the summary of findings of the study on the effectiveness of teaching strategies among the kindergarten teachers. The conclusions were based on the purpose, research questions and results of the study.

The data shows that the teaching workforce consists of experienced, mostly female educators who actively pursue professional development. Their stability and engagement suggest strong potential for instructional improvement, but to maximize impact, training must align with classroom needs and include follow-up support.

Based on the findings, kindergarten teachers effectively implement interactive learning, making it the most established strategy in their classrooms. However, the inconsistent use of hands-on activities, limited group discussions, and minimal creative project integration highlight the need for greater support, resources, and targeted training. Enhancing these areas will promote a more balanced and well-rounded approach to early childhood education.

Effective teaching strategy supported by the data, it can be concluded that kindergarten teachers view all four teaching strategies—interactive learning, hands-on activities, group discussions, and creative projects—as effective in enhancing student learning. Hands-on activities are considered the most effective, indicating strong confidence in their ability to boost engagement and understanding. Although creative projects are seen as beneficial, they are perceived as less effective than other strategies, pointing to a need for additional support, training, and resources to maximize their classroom impact.

Kindergarten teachers face significant challenges in implementing interactive learning, hands-on activities, group discussions, and creative projects, with interactive learning being the most difficult due to learners' behavioral and emotional variability. Although creative projects are perceived as less challenging, they are still hindered by limited

resources and institutional support. These challenges highlight both classroom-level difficulties and broader systemic issues that must be addressed to ensure the effective use of these teaching strategies.
Demographic factors such as sex, age, and professional development significantly influence the implementation of teaching strategies in kindergarten. Female teachers more frequently use interactive learning and group discussions, while those in middle age are more inclined to apply creative projects. Participation in seminars and training further enhances the use of creative projects, highlighting the vital role of continuous professional development in promoting effective and innovative teaching practices.

There is a significant positive relationship between the effectiveness of teaching strategies and their level of implementation. Effective use of interactive learning, hands-on activities, group discussions, and creative projects lead to improved student engagement and learning outcomes. Interactive learning and hands-on activities showed the strongest correlations, while creative projects, though slightly weaker, still had a positive impact. These results highlight the need for proper implementation to fully realize the benefits of these strategies in early childhood education.

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