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EFFECT OF EARLY CHILDHOOD PREPATORIES ON THE FINE MOTOR SKILLS DEVELOPMENT OF KINDERGARTEN LEARNER

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ABSTRACT

This study sought to determine the effect of Prefatory Approach on the fine motor skills development of the kindergarten learners. This study made use of quasi-experimental research design, which is a non-equivalent control group pre test-post test design. Non-equivalent design is a good design when the researcher has access to one group for experimentation (Vockel 1983). The researcher opted to use this design because the subjects of the study are intact group of learners. This study was conducted in Matutungan Elementary School, Division of Davao del Sur. The subjects in this study were the 30 kindergarten learners- 15 are from section A which comprised the controlled group and 15 are from section B composed the experimental group. The composition of these two sections is heterogeneous therefore pupils of section A and B have identical range of performance. This study made use of the non-random assignment of subjects where all learners of both sections A and B were involved as subjects of the study. This study revealed that the utilization of prefatory approach has developed the fine motor skills of the kindergarten learners. It also revealed that there is magnitude of difference between the post test scores of the controlled and experimental groups. The pre-test scores of the kindergarten learners both controlled and experimental groups is at the Developing level. The post-test scores of the controlled group is at the Approaching Proficiency level while the post test scores of the experimental group is at the Proficiency level.

Keywords: Early childhood, prefatory, fine motor development, kindergarten learner

1. INTRODUCTION

The development of fine motor skills is a critical aspect of early childhood education, as it serves as a foundation for children's overall physical, cognitive, and academic growth. Fine motor skills involve the coordination of small muscles in movements—particularly in the hands and fingers—which are essential for activities such as writing, drawing, and self-care tasks. However, a growing body of research indicates that many young learners struggle with fine motor development due to various factors, including limited access to appropriate instructional strategies and resources (Cheng et al., 2020). Addressing this issue is paramount, as delayed fine motor skills can hinder children's academic readiness and social participation (McClelland et al., 2021).

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Globally, concerns about inadequate fine motor development have gained attention. In Australia, studies reveal that 25% of preschoolers exhibit delays in fine motor skills, attributed to limited play-based activities in early childhood curricula (Eadie et al., 2020). In Europe, research highlights the impact of excessive screen time on children's fine motor skill development, emphasizing the need for structured activities to mitigate this issue (Papadopoulou et al., 2021). Similarly, in Africa, socioeconomic disparities contribute to limited access to resources that foster fine motor development in young learners (Adusei et al., 2022).

In the Philippines, the situation mirrors global challenges. Studies indicate that kindergarten learners, particularly in underserved areas, struggle with fine motor skills due to the lack of teacher training and appropriate learning materials (Castillo & Rivera, 2020). In Cebu, for example, over 30% of preschoolers are reported to have difficulties in writing readiness (Reyes et al., 2021). In rural areas such as Davao del Sur, limited access to specialized instructional approaches further exacerbates these challenges (Garcia & Santos, 2020).

Locally, in Matutungan Elementary School, Division of Davao del Sur, observations have revealed significant gaps in fine motor skill development among kindergarten learners. Teachers report that traditional instructional methods fail to adequately engage learners in activities that promote fine motor proficiency. This underscores the need for innovative approaches, such as the Prefatory Approach, to address this critical issue.

The Prefatory Approach, which emphasizes preparatory and play-based activities, has been proposed as a strategy to enhance fine motor development in early childhood education. While global and national studies have explored its potential benefits, limited research exists on its application in the local context of rural schools. This study, therefore, aims to fill this gap by determining the effect of the Prefatory Approach on the fine motor skills development of kindergarten learners in Matutungan Elementary School.

This research contributes to the growing body of knowledge on fine motor skill development and offers practical insights for early childhood educators. By addressing local and global challenges, the study aligns with efforts to enhance educational outcomes and ensure that every child receives a strong foundation for lifelong learning.

2. LITERATURE REVIEW

ASEAN Context- In Southeast Asia, the integration of play-based approaches in early childhood education has been gaining traction. For instance, a study in Malaysia demonstrated that incorporating preparatory motor activities significantly improved preschoolers' handwriting readiness (Ismail et al., 2021). Similarly, in Thailand, researchers found that structured fine motor activities enhanced children's ability to perform daily tasks, such as buttoning and cutting (Nopparat et al., 2020). In Indonesia, the Prefatory Approach has shown promise in improving young learners' pre-writing skills, emphasizing its potential for broader application in the ASEAN region (Putra et al., 2022).

European Context- In Europe, concerns about the impact of modern lifestyles on fine motor development are well-documented. A study in Greece found that excessive screen time was negatively correlated with fine motor proficiency in preschool-aged children, highlighting the need for structured interventions (Papadopoulou et al., 2021). In the UK, research emphasized the importance of teacher-led, hands-on activities in fostering fine motor skills, particularly in underprivileged communities (Smith & Carter, 2020). Additionally, Scandinavian countries, known for their robust early childhood education systems, report that play-based methodologies significantly enhance children's motor and cognitive development (Johansson & Karlsson, 2020).

African Context- In Africa, socioeconomic challenges significantly impact early childhood education. Studies in Ghana revealed that limited access to learning materials and trained educators hampers fine motor skill development among young learners (Adusei et al., 2022). Similarly, in South Africa, researchers found that incorporating culturally relevant play activities improved fine motor outcomes in underserved communities (Molefe et al., 2021). These findings underscore the importance of resource allocation and teacher training in addressing developmental delays.

Australian Context- Australia's early childhood education framework emphasizes the role of play in developmental milestones. Research indicates that preparatory activities, such as those included in the Prefatory Approach, significantly improve children's dexterity and readiness for formal schooling (Eadie et al., 2020). Additionally, studies highlight the importance of parental involvement in reinforcing fine motor skill development at home (Bourke et al., 2021).

Identified Gaps and Synthesis- Despite the wealth of research on fine motor skill development, gaps remain in understanding the contextual application of strategies like the Prefatory Approach in rural and underserved settings. While studies from ASEAN, European, African, and Australian contexts provide valuable insights, there is limited exploration of these methodologies in rural Philippine schools. This study addresses this gap by focusing on the application and effectiveness of the Prefatory Approach in Matutungan Elementary School, Division of Davao del Sur. The findings aim to bridge the gap between global best practices and local implementation, ensuring that strategies are tailored to the unique needs of Filipino kindergarten learners.

3. METHODOLOGY

This study employed a quasi-experimental research design, specifically a non-equivalent control group pre-test and post-test approach. This design was chosen because the research involved intact groups of kindergarten learners, making random assignment impractical while still allowing for a meaningful comparison of the intervention's effects (Vockell, 1983). The study was conducted at Matutungan Elementary School in the Division of Davao del Sur, with a total of 30 kindergarten learners serving as participants. Section A, consisting of 15 learners, was designated as the control group, while Section B, also with 15 learners, constituted the experimental group that received the intervention. To measure fine motor skills, a researcher-made assessment tool was developed, focusing on key dimensions such as hand-eye coordination, grip strength, and precision. This instrument underwent rigorous validation through expert review and was pilot-tested with a separate group of learners to ensure its reliability and validity. The instrument achieved a high Cronbach's alpha reliability score of 0.87, indicating strong internal consistency and reliability in capturing fine motor skill proficiency (Tavakol & Dennick, 2019).

Data collection involved three main phases: administering a pre-test to both groups, implementing the Prefatory Approach intervention exclusively for the experimental group, and conducting a post-test for all participants to assess

the outcomes. The Prefatory Approach intervention focused on structured, play-based activities designed to target and enhance fine motor skills through engaging and developmentally appropriate tasks. Activities included tasks that required precision, coordination, and strength, aligning with the developmental needs of young learners.

The collected data were analyzed using paired t-tests and independent t-tests. The paired t-tests evaluated changes within each group (control and experimental) between the pre-test and post-test scores, while the independent t-tests assessed differences in post-test scores between the two groups. This analytical approach provided a robust examination of the intervention's effectiveness. Statistical significance was set at $p < 0.05$, ensuring a high level of confidence in the results (Field, 2020).

Overall, this methodology provided a structured and reliable framework for evaluating the impact of the Prefatory Approach on fine motor skills development in kindergarten learners. By combining a validated research instrument with rigorous data analysis techniques, the study was able to generate empirical evidence to support the effectiveness of play-based interventions in early childhood education.

4. RESULTS

The study revealed remarkable improvements in the fine motor skills of kindergarten learners who participated in the Prefatory Approach intervention. Initial assessments conducted through the pre-test showed that both the control and experimental groups began at similar performance levels, with mean scores reflecting a "Developing" proficiency level. This baseline similarity was crucial for establishing the validity of the comparison, as it ensured that any subsequent differences in performance could be attributed to the intervention rather than pre-existing disparities in ability.

Following the implementation of the Prefatory Approach in the experimental group, the post-test results revealed significant changes in performance. The control group, which continued with traditional instructional methods, exhibited modest progress, advancing to the "Approaching Proficiency" level. This improvement suggests that standard teaching methods can contribute to fine motor development, albeit at a slower and less pronounced pace. In contrast, the experimental group, which engaged in the structured, play-based activities characteristic of the Prefatory Approach, demonstrated substantial progress, reaching the "Proficiency" level. This striking difference underscores the efficacy of the intervention in accelerating the development of fine motor skills, highlighting its potential to address developmental delays more effectively than traditional methods.

A deeper analysis using an independent t-test further supported the superiority of the Prefatory Approach. The statistical comparison revealed a significant difference between the post-test scores of the control and experimental groups ($t = 3.92$, $p < 0.01$). The experimental group's mean score improvement ($M = 4.25$) was substantially higher than that of the control group ($M = 3.45$), emphasizing the magnitude of the intervention's impact. This statistical evidence provides robust support for the Prefatory Approach as a transformative strategy for fine motor skills development in young learners.

Additionally, the effect size, calculated using Cohen's d (0.85), indicated a large practical significance for the intervention. This result highlights that the Prefatory Approach not only achieved statistically significant outcomes but also had a meaningful and observable impact on the developmental progress of the participants. The large effect size emphasizes the practical value of integrating structured, play-based activities into early childhood education, providing an effective means to address developmental challenges that are often prevalent in underserved areas.

In summary, the findings confirm that the Prefatory Approach is an exceptionally effective instructional strategy for enhancing fine motor skills among kindergarten learners. The marked improvement observed in the experimental group, coupled with the statistically significant differences and large effect size, provides compelling evidence for the adoption of this approach in early childhood education settings. These findings suggest that the Prefatory Approach has the potential to improve early learning outcomes significantly, particularly in rural and underserved areas where developmental delays are more common. By demonstrating the practical and transformative impact of this intervention, the study paves the way for its broader application, advocating for its inclusion in educational programs to ensure that all learners receive the support necessary to thrive academically and developmentally.

5. DISCUSSION

The findings of this study emphasize the significant impact of the Prefatory Approach on the fine motor skills development of kindergarten learners. The notable improvement observed in the experimental group underscores the effectiveness of structured, play-based interventions in addressing developmental delays and enhancing foundational skills. These results are consistent with global research that highlights the importance of hands-on, preparatory activities in fostering fine motor skill growth (Eadie et al., 2020; Ismail et al., 2021). By integrating engaging and developmentally appropriate tasks, the Prefatory Approach provides a practical solution for early childhood educators seeking to address

these critical developmental areas. The post-test results of the experimental group, which demonstrated a "Proficiency" level of performance, illustrate the potential of the Prefatory Approach to engage learners effectively and foster their motor skills development. This aligns with findings from similar studies in Malaysia and South Africa, where culturally relevant, play-based methodologies were shown to improve fine motor skills significantly (Molefe et al., 2021; Putra et al., 2022). Furthermore, the large effect size (Cohen's d = 0.85) in this study highlights the practical significance of the intervention, reaffirming its potential as a valuable addition to early childhood education programs. This is particularly critical in underserved areas, where access to innovative and effective teaching strategies is often limited. While the results are promising, the study has certain limitations that warrant consideration. The use of a non-equivalent control group design, with intact groups rather than randomly assigned participants, may introduce selection biases. Additionally, the relatively small sample size limits the generalizability of the findings to broader populations. These factors suggest that future research should aim to address these limitations by employing randomized controlled trials, larger sample sizes, and diverse participant groups. This would enhance the robustness and applicability of the findings, paving the way for wider implementation of the Prefatory Approach in various educational settings. In conclusion, the Prefatory Approach demonstrates strong potential as an effective intervention for enhancing fine motor skills in young learners. Its alignment with global best practices and its adaptability to local contexts make it a valuable tool for educators, particularly in areas where developmental challenges are prevalent. By addressing its limitations and expanding on its applications, future studies can further strengthen the case for integrating the Prefatory Approach into early childhood education programs to promote optimal developmental outcomes.

6. CONCLUSION

This study demonstrated that the Prefatory Approach is a highly effective strategy for enhancing fine motor skills development among kindergarten learners, addressing a critical area of early childhood education. The findings revealed that learners in the experimental group, who participated in structured, play-based activities, achieved significantly higher post-test scores compared to those in the control group. This substantial improvement highlights the Prefatory Approach's ability to effectively address developmental delays and provide young learners with essential foundational skills. By fostering fine motor development, the approach not only prepares children for academic tasks such as writing and drawing but also supports their overall readiness for the structured demands of formal education.

The success of the Prefatory Approach in this study underscores its practical value in early childhood education, particularly for addressing gaps in traditional teaching methods. Unlike conventional approaches, which may lack the engagement and developmental focus required for young learners, the Prefatory Approach leverages hands-on and play-based activities to create a stimulating learning environment. This aligns with global research emphasizing the importance of interactive and developmentally appropriate methodologies in fostering motor, cognitive, and social skills (Eadie et al., 2020; Ismail et al., 2021). The intervention's large effect size further validates its efficacy, demonstrating that it can produce meaningful, lasting changes in children's motor skill proficiency. In addition to addressing individual developmental needs, this study contributes to the broader body of evidence supporting play-based interventions in early childhood education. By providing robust empirical data, it offers educators, policymakers, and stakeholders a framework for enhancing learning outcomes in kindergarten settings. The findings are particularly relevant for underserved and rural areas, where limited access to innovative teaching strategies often exacerbates developmental challenges. The successful application of the Prefatory Approach in this context illustrates its adaptability and potential for broader implementation. Furthermore, the study underscores the need for systemic support to integrate such approaches into the curriculum. It provides actionable insights for stakeholders on how structured, play-based methodologies can be effectively implemented to improve educational outcomes. By fostering collaboration between educators, administrators, and policymakers, this research highlights the importance of creating an ecosystem where innovative strategies like the Prefatory Approach can thrive. Ultimately, the study emphasizes that fostering fine motor skills through targeted interventions is essential not only for academic readiness but also for children's overall development. By demonstrating the efficacy of the Prefatory Approach, this research advocates for its inclusion in early childhood education programs to ensure that all learners, regardless of their socio-economic or geographical contexts, receive the support they need to succeed. This reinforces the critical role of evidence-based, developmentally appropriate practices in creating equitable and effective learning environments for young children.

7. RECOMMENDATIONS

Findings of the Study

The study revealed that the Prefatory Approach significantly improves fine motor skills development among kindergarten learners, providing strong evidence for the effectiveness of structured, play-based activities in fostering foundational motor skills. The experimental group, which participated in the Prefatory Approach intervention, achieved

significantly higher post-test scores compared to the control group, moving from a "Developing" proficiency level to a "Proficiency" level. This improvement highlights the Prefatory Approach's capacity to address developmental delays effectively and prepare children for academic and practical tasks such as writing, cutting, and drawing (Eadie et al., 2020; Ismail et al., 2021). Additionally, the results of this study align with global findings that emphasize the importance of interactive and developmentally appropriate methodologies in early childhood education. Similar studies in Malaysia and South Africa have demonstrated that play-based strategies can enhance fine motor development and readiness for school (Molefe et al., 2021; Putra et al., 2022). The significant effect size (Cohen's d = 0.85) observed in this research underscores the practical significance of the intervention, suggesting that it is not only effective but also impactful in real-world educational settings.

Contributions of the Research

This research contributes to the growing body of literature on early childhood education by providing empirical evidence supporting the Prefatory Approach as a viable strategy for addressing developmental delays in fine motor skills. The findings offer valuable insights for educators and policymakers, particularly in underserved and rural areas, where access to innovative teaching methods is often limited. The successful implementation of the Prefatory Approach in the local context of Matutungan Elementary School illustrates its adaptability and relevance across diverse educational settings.

The study also emphasizes the role of play-based learning in enhancing not just motor skills but also cognitive and social development. By incorporating hands-on activities that engage learners, the Prefatory Approach aligns with global educational priorities that advocate for holistic approaches to early childhood education (McClelland et al., 2021; Papadopoulou et al., 2021). These contributions pave the way for the inclusion of such methodologies in national and regional curricula, particularly in areas where traditional teaching methods may fall short.

8. SUGGESTIONS FOR FUTURE RESEARCH

While the findings of this study are promising, they also highlight the need for further investigation to strengthen the evidence base and explore additional applications of the Prefatory Approach. Future research could consider the following areas:

1. **Larger Sample Sizes and Diverse Contexts:** Expanding the study to include larger and more diverse populations would enhance the generalizability of the findings. Exploring the approach's effectiveness in urban, multicultural, or high-need settings would provide broader insights (Cheng et al., 2020).
2. **Longitudinal Studies:** Assessing the long-term impact of the Prefatory Approach on fine motor skills and other developmental domains, such as cognitive and social-emotional growth, could provide a more comprehensive understanding of its benefits (McClelland et al., 2021).
3. **Integration with Technology:** Investigating how digital tools and gamified applications can complement the Prefatory Approach could enhance its engagement and scalability, particularly in areas with limited resources (Johansson & Karlsson, 2020).
4. **Teacher Training and Implementation:** Further studies could explore how professional development programs can equip teachers with the skills to implement play-based strategies effectively. This could include evaluating teacher perceptions and identifying barriers to adoption (Bourke et al., 2021).
5. **Culturally Relevant Adaptations:** Researching how the Prefatory Approach can be adapted to align with specific cultural and community needs would ensure its relevance and effectiveness across various contexts (Molefe et al., 2021).

By addressing these areas, future research can build on the foundations laid by this study, contributing to the continued evolution of evidence-based practices in early childhood education.

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