Handwriting Skills Of Kindergarten Pupils Taught Under The Mobile Intensive Writing Clinic

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ABSTRACT

This study examined the effectiveness of the Mobile Intensive Writing Clinic (MIWC) in improving the handwriting skills of kindergarten pupils at Pallas Elementary School during School Year 2021–2022. A one-group pretest–posttest quasi-experimental design was employed involving 22 kindergarten pupils selected through purposive sampling. The intervention consisted of individualized handwriting instruction conducted through home visitations using a mobile writing clinic equipped with writing worksheets and digital writing tools. Handwriting performance was assessed before and after the intervention using standardized handwriting activities focusing on letter formation, directionality, spacing, alignment, and stroke accuracy. Descriptive statistics, including frequency, percentage, and weighted mean, were utilized to describe pupils' handwriting performance, while inferential statistics determined the significance of the difference between pretest and posttest scores. Results revealed that pupils demonstrated substantial improvement in handwriting performance after participating in the intervention. Significant gains were observed in correct letter formation, stroke direction, spacing, and overall handwriting quality. The findings indicate that the Mobile Intensive Writing Clinic effectively enhanced pupils' fine motor skills and handwriting competence despite the challenges posed by distance learning during the COVID-19 pandemic. The intervention also increased learners' motivation and interest in writing. The study recommends the adoption of similar home-based handwriting interventions to support early literacy development among kindergarten learners, particularly in geographically isolated and low-connectivity communities.

Keywords: handwriting skills, kindergarten pupils, mobile intensive writing clinic, fine motor skills, action research

INTRODUCTION

Handwriting is a fundamental component of early literacy that enables learners to express ideas, communicate effectively, and develop language skills. Unlike natural motor activities such as walking or running, handwriting requires explicit instruction and continuous practice to master correct letter formation, spacing, alignment, and directionality. It is a complex psychomotor skill that integrates cognitive, perceptual, linguistic, and fine motor abilities.

Studies have consistently emphasized the importance of handwriting instruction during early childhood. According to Copple and Bredekamp (2009), kindergarten is a critical stage for developing communication and fine motor skills. Asher (2006) likewise explained that handwriting exercises strengthen motor learning necessary for accurate letter formation. Furthermore, Graham and Harris (2005) found that well-developed fine motor skills significantly improve writing speed and productivity, while Graham et al. (1997) established a strong relationship between handwriting proficiency, writing fluency, and writing quality.

The implementation of the K to 12 Basic Education Curriculum recognizes kindergarten as the foundation of formal education in the Philippines. However, the COVID-19 pandemic disrupted early childhood instruction as schools shifted to modular distance learning. Many learners had limited opportunities for guided handwriting practice, resulting in poor letter formation, letter reversals, inconsistent letter size, poor alignment, irregular spacing, and weak fine motor development.

During the early registration for School Year 2021–2022, the researcher observed that many incoming kindergarten pupils at Pallas Elementary School experienced significant handwriting difficulties. These challenges were attributed to inadequate preschool writing experiences during the pandemic, limited parental guidance, delayed psychomotor development, and varying educational backgrounds of parents.

Recognizing these concerns, the researcher developed the Mobile Intensive Writing Clinic (MIWC), an innovative home-based intervention designed to provide individualized handwriting instruction while complying with health protocols during the pandemic. The intervention aimed to improve pupils' handwriting skills through intensive drills, guided practice, and immediate corrective feedback delivered during scheduled home visits.

Specifically, this study sought to answer the following research questions:

1. What were the handwriting skills of kindergarten pupils before the implementation of the Mobile Intensive Writing Clinic?
2. What were the handwriting skills of kindergarten pupils after the implementation of the Mobile Intensive Writing Clinic?
3. Is there a significant difference between the pretest and posttest handwriting performance of kindergarten pupils?
4. What experiences were encountered by the teacher, parents, and learners during the implementation of the intervention?
5. What improvements may be incorporated to further enhance the Mobile Intensive Writing Clinic?

METHODS

Research Design

The study employed a one-group pretest–posttest quasi-experimental design to determine the effectiveness of the Mobile Intensive Writing Clinic in improving the handwriting skills of kindergarten pupils. The design enabled the researcher to compare pupils' handwriting performance before and after the intervention using the same group of participants.

Participants

The participants consisted of all twenty-two (22) kindergarten pupils enrolled at Pallas Elementary School during School Year 2021–2022, comprising nine (9) boys and thirteen (13) girls. Purposive sampling was employed since all enrolled kindergarten pupils demonstrated handwriting difficulties and were considered beneficiaries of the intervention.

Eight members of the District Quality Assurance Team validated the instructional materials and intervention based on content quality, presentation, organization, and appropriateness for kindergarten learners.

Research Instrument

Handwriting worksheets developed by the researcher served as both the pretest and posttest instruments. The assessment measured pupils' ability to correctly write uppercase and lowercase letters focusing on:

- Correct letter formation
- Proper stroke direction
- Starting point of writing
- Line formation

- Circle closure
- Letter alignment
- Letter spacing

Interview guides were likewise used to collect qualitative feedback from parents, learners, and the teacher regarding their experiences during the implementation.

Intervention

The Mobile Intensive Writing Clinic was designed as a portable handwriting instruction system delivered through home visitation. A tricycle served as the mobile learning station equipped with a tablet connected to a laptop monitor, allowing both the researcher and the learner to observe handwriting movements in real time.

Each learner received one-hour individualized handwriting sessions focusing on intensive writing drills, correction of handwriting errors, guided practice, and reinforcement activities. Printed handwriting worksheets were also provided for home practice between sessions.

Data Collection Procedure

The study followed the following procedure:

1. Administration of the pretest to determine baseline handwriting skills;
2. Analysis of handwriting errors and identification of learning needs;
3. Implementation of the Mobile Intensive Writing Clinic through scheduled home visits;
4. Distribution of supplementary handwriting worksheets;
5. Administration of the posttest after completion of the intervention;
6. Conduct of interviews with learners, parents, and the teacher.

RESULTS AND DISCUSSION

Quality of the Mobile Intensive Writing Clinic

Prior to implementation, the Mobile Intensive Writing Clinic and its accompanying instructional manual underwent evaluation by eight members of the District Quality Assurance Team. The instructional material obtained a perfect score in all evaluation domains, including content, other findings, and additional requirements for manipulative materials, resulting in an overall rating of 80 points, which exceeded the minimum passing score of 62 points. These findings indicate that the intervention met the quality standards required for classroom utilization.

The evaluators unanimously rated the instructional material as Very Satisfactory in terms of content, relevance of visuals, organization, usability, and technical design. Likewise, no conceptual, factual, grammatical, or typographical errors were identified. The intervention also satisfied all technical requirements for manipulative instructional materials, demonstrating its appropriateness for kindergarten learners.

These findings suggest that the Mobile Intensive Writing Clinic possesses sufficient instructional quality to support handwriting instruction among beginning learners.

Handwriting Performance Before and After the Intervention

Table 3 presents the handwriting performance of kindergarten pupils before and after the implementation of the Mobile Intensive Writing Clinic.

The pretest Mean Percentage Score (MPS) of 37.50 indicated a **Below Standard** level of performance. This result demonstrates that most pupils experienced considerable difficulty in correctly forming letters of the alphabet prior to the intervention. Their poor performance may be attributed

to limited handwriting practice during the COVID-19 pandemic, inadequate development of fine motor skills, and insufficient preschool experiences.

Following the implementation of the intervention, the pupils obtained a posttest Mean Percentage Score of **79.02**, corresponding to a **Poor** level of mastery under the adopted rubric. Although the mastery level remained below the desired proficiency standard, the increase of **41.52 percentage points** represents substantial improvement in handwriting performance. The findings indicate that repeated handwriting drills, individualized instruction, and immediate corrective feedback contributed to the enhancement of pupils' handwriting skills.

The improvement supports the theory that handwriting is a motor skill that develops through continuous guided practice. As explained by Graham and Harris (2005), repeated handwriting exercises improve writing fluency and overall writing performance. Similarly, Asher (2006) emphasized that systematic handwriting instruction strengthens the motor learning necessary for accurate letter formation.

Difference Between Pretest and Posttest Performance

To determine the effectiveness of the intervention, a paired-samples t-test was conducted comparing the pretest and posttest scores.

Results showed a computed **t-value of 18.10**, which exceeded the critical value of **2.08** at the 0.05 level of significance. Consequently, the null hypothesis was rejected, indicating a statistically significant difference between pupils' handwriting performance before and after exposure to the Mobile Intensive Writing Clinic.

The statistically significant improvement demonstrates that the intervention effectively enhanced handwriting skills among kindergarten pupils. The individualized nature of the Mobile Intensive Writing Clinic

allowed the researcher to immediately identify handwriting errors, provide corrective demonstrations, and reinforce correct letter formation during each session. Such personalized instruction enabled learners to improve their motor coordination, writing accuracy, and confidence.

These findings are consistent with previous studies by Graham et al. (1997), who reported that handwriting instruction significantly influences writing fluency and quality, and by Jones, Reutzel, and Fargo (2010), who found that early writing instruction positively contributes to literacy development.

Experiences of Learners and the Teacher

Interview data revealed positive experiences among both the learners and the teacher during the implementation of the Mobile Intensive Writing Clinic. Most pupils expressed enjoyment and increased confidence in writing. They reported that writing became easier and more enjoyable after participating in the intervention. Learners also appreciated seeing their handwriting displayed on the monitor, which motivated them to improve their performance.

The teacher observed that pupils became more motivated to write correctly and showed greater interest in handwriting activities. Although some learners initially experienced distractions due to the mobile nature of the intervention and the presence of observers, they gradually adapted to the learning environment and became more independent writers.

The qualitative findings complement the quantitative results by demonstrating that the Mobile Intensive Writing Clinic not only improved handwriting performance but also increased learners' motivation, confidence, and engagement in writing activities.

Overall, the findings affirm that the Mobile Intensive Writing Clinic is an effective instructional innovation for improving handwriting skills among kindergarten pupils, particularly in contexts where face-to-face classroom instruction is limited. The intervention provided individualized support that addressed learners' handwriting difficulties while promoting fine motor development and positive attitudes toward writing.