



INSTRUCTIONAL STRATEGIES USED BY TEACHERS TO ENHANCE HANDWRITING SKILLS AMONG GRADE 1 LEARNERS

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Abstract

Handwriting remains a foundational skill in early literacy, influencing learners' academic development and fine motor coordination. However, many Grade 1 learners struggle to develop adequate handwriting skills due to various instructional and contextual challenges. This study explores the instructional strategies used by teachers to enhance handwriting skills among Grade 1 learners. A qualitative research approach was employed, using semi-structured interviews to collect data from Foundation Phase teachers in three purposively selected primary schools. The findings revealed that teachers use multi-sensory techniques, fine motor strengthening activities, and guided practice to improve handwriting. However, challenges such as large class sizes, lack of resources, and time constraints were also reported. The study recommends ongoing professional development, provision of adequate resources, and reduced class sizes to support effective handwriting instruction. These insights contribute to improved classroom practices that support early writing development.

Keywords: handwriting development, Grade 1, instructional strategies, Foundation Phase, qualitative research

1. Introduction

Handwriting is a basic skill that has been used throughout history as part of early childhood education but is still a necessary aspect of literacy development especially in the Grade 1 classroom. It serves as a communication function to some degree, but it also provides for fine motor development, cognitive processing and academic beneficitation (Van der Merwe & Jordaan, 2021). In the Foundation Phase, the importance of a suitable handwriting pedagogy promotes the basis for further learning through developing fluent writing skills to express meaningful ideas and be involved in learning tasks with confidence. However, many South African learners in Grade 1 find handwriting to be a problem because of the variety of pedagogical, developmental and contextual problems (Mabaso & Matlala, 2022) they encounter. This study will thus focus on the pedagogical techniques used by Foundation Phase teachers to enhance and develop handwriting amongst Grade 1 learners. The term pedagogical techniques refer to the specific methods, techniques and approaches used by teachers to enhance the teaching and learning process. In the teaching of handwriting, these techniques can include activities such as tracing, guided writing, fine-motor activities, multi-sensory types of learning and individualised or focused support. Where these pedagogical methods and techniques are correctly used, they make a substantial contribution to the improvement of handwriting legibility, speed, and confidence amongst the learners (Dube & Dube, 2023).

The importance of this study depends on the growing concern for the drop in the quality of handwriting or the state of readiness of learners in a position to engage in formal schooling. With the increased emphasis on digital literacy, the teaching of handwriting is neglected, and this frequently has a further bad impact on the academic progression of learners (Moodley & Phatudi, 2021). One of the reasons for this is the Curriculum and Assessment Policy Statement (CAPS) in South Africa which lays great emphasis on written tasks, assessments and learner portfolios and the need for handwriting proficiency is thus paramount for academic success in the Foundation Phase. The need for pedagogical techniques in dealing with handwriting gives attention to the success of the learners. Teachers are the implementors of the curriculum and apply their modelling of correct handwriting techniques, the identification of learning barriers and the adaptation of instruction according to the needs of the diverse learners. By making use of the techniques available to them teachers can teach the correct posture, pencil grip, letter formation, spacing and alignment techniques for handwriting. There are also the benefits of teaching handwriting from the point of view of the development of attention, memory and involvement in the classroom that handwriting encourages (Ngoben & Thwala, 2022).

However, despite the need there exists a distinct gap in research dealing with how teachers in South Africa practically implement handwriting techniques in diverse and resource poor classes. Much of the literature dealing with handwriting development either addresses this from a developmental or occupational therapy point of view, this being as follows, there is a limited amount about how teachers use techniques and practice pedagogical methods in Grade 1 classes. There is also not much in the way of research on how teacher training, professional development and curriculum continuity and development affect the quality of the handwriting pedagogical process. There will thus be a very great significance of this study in several ways. From the educational point of view, this will provide values in the knowledge of effective techniques which can be useful in helping to improve learner development. From the point of view of policy development, this study may also provide valuable insight in the area of guidelines for the provision of resources and interventions in an inclusive situation with respect to the teaching of handwriting in the early years of schooling. The curriculum development will also be informed by the improved continuity of handwriting in the Foundation phase curriculum. Last, the field of teacher professional development will also benefit as it is able to highlight those areas of need where teacher training, support and provision of resources are imperative if handwriting outcomes in Grade 1 learners are to be improved. By focusing on the supply of handwriting pedagogical techniques in respect to teachers, this study will also contribute towards a better understanding of classroom practice and realities, and it will also recommend strategies whereby handwriting proficiency in developing literacy can be improved and enhanced.

Literature review

The development of handwriting skills of learners is vital in their education, especially during the first years of formal schooling. For learners in Grade 1 it is noted Handbook of occupational therapy. The necessity of handwriting skills is connected to academic performance, self-regulating oneself and communicating (Van der Merwe & Jordaan, 2021). Strategies to teach handwriting serve a dynamic process where learners develop legible handwriting. This skill lays the foundation for all learning in all subjects. Research on handwriting instruction shows that the instruction and skill development of handwriting through well-defined strategies, creates better opportunities for the learners' performance in fluency of handwriting as well as literacy (Zuilkowski and Jukes, 2020). Worldwide handwriting instruction remained a topic of concern in early childhood education, especially with the shift to digital literacy. In foreign countries like America and Finland, teachers and education departments make use of structured handwriting programs like Handwriting Without Tears and Zaner-Bloser which entail sensory approaches, regularly practice and teacher modelling (Cahill, 2021). In contrast it can be stated that in many low resource countries and also in Africa, including South Africa, handwriting instruction often follows a less structured method and that there is less access to specific resources and programs. (Mabaso & Matlala, 2022). South African classrooms, especially in the rural areas and also in the disadvantaged areas encounter problems like overcrowding, scarcity of teaching aids and inadequate teacher training as well as practice, which hampers better and proper handwriting instruction. (Ngobeni & Thwala, 2022). Even though the Curriculum Assessment Policy Statement (CAPS) necessitates that handwriting is developed in the Foundation Phase, little information is provided on how to effect practical measures for diverse learners (Moodley & Phatudi, 2021). The role of teachers in modelling, guiding and reinforcing handwriting skills is very important. Their perceptions, training and classroom practice have an influence on how handwriting is taught and learnt (Van der Merwe & Jordaan, 2021). Teachers need to identify learner needs, scaffold and adjust teaching strategies, due to the different needs regarding levels of fine motor development and writing readiness. According to Dube and Dube (2023), those teachers who are subjected to teacher training in handwriting tasks are more confident and effective in supporting learner progress in this regard.

The results of the research show that teachers' perceptions across the board regarding the importance or otherwise of handwriting to the learning process, are concomitantly enlarged will lead to a related impact on the hours devoted to the instruction of handwriting. In some cases, the de-emphasis of handwriting in favour of literacy and numeracy outcomes may result (especially in crass resource deficit situations) (Moodley & Phatudi, 2021).

A series of measures have been identified to heighten the handwriting skills of early learners. These are fine motor development programmes, multiparty sensory approaches (e.g. sand, finger tracing, playdough) and letter tracing and guided writing together with visual aids (Cahill, 2021). The implementation of practice in so doing, which stems from occupational therapy, in particular strength training exercises which strengthen the muscles of the hands, and differential postural types have also been shown to be successful in various studies throughout the world (Zuilkowski & Jukes, 2020). In South Africa, there are no structured and context sensitive handwriting development programmes for Grade 1. Many teachers are using CAPS (Curriculum Assessment Policy Statements-

Department of Basic Education) workbooks and/or materials that they have formed themselves without any further support systems or professional training (Ngobeni & Thwala, 2022). The number of programmes designed for multilingual and socio-economically different school classrooms are, therefore limited for handwriting instruction. This limits also the effectiveness of those handwriting instruction programmes. Global studies portray what effective handwriting strategies there are, but not much research has been done on South African Foundation Phase classrooms. The studies that are done, are not on how teachers practically have implemented handwriting instruction on overcrowded and not well-resourced classrooms. There is also limited understanding of the influence of teacher training, curriculum design or support systems on handwriting instruction of schools in the study. (area of facilitator). (Mabaso & Matlala, 2022). Very little is known about how teachers have adapted strategies for learners with developmental delay, learning barriers or fine motor control. There is also a need for further locally based research to give content to policies which can improve teacher training and curriculum design with respect to handwriting in South Africa.

The literature does indicate the fact that although there are well documented lasting and effective instructional strategies for handwriting, in the South African Foundation Phase it is under researched and limited in application. The teacher has an essential role, but lacks in the training, resources and structured programmes to give effective handwriting instruction. In order to improve on these deficiencies further study and policy intervention is essential, to benefit the learning outcomes of the learners as also the developmental learning, to be able to function in the world of today

The handwriting as such is a fundamental part of early literacy and plays a role in the education of children in their academic learning and cognitive development. Research found that it is not merely a mechanical task, but a skill that is complex, as it involves motor coordination, visual perception, memory and knowledge of language skills (Graham et al., 2018). In Foundation Phase, handwriting instruction gives supports to learners, enabling them to translate their thinking into written symbols, thereby improving their reading and spelling. It is further elaborated by Medwell en Wray (2020), that the fluency of handwriting gives to higher order quality in the written composition, by enabling to spend more time upon content generation as opposed to letter generation. Therefore, it gives better results overall for literacy improvement.

Fine motor skills, including strength of fingers, hand-eye coordination and control of small muscles, significantly contribute to the early development of handwriting. Fine motor skills are considered a significant indicator of handwriting readiness and legibility. Engaging in activities such as cutting, threading, and manipulating small objects will assist students to coordinate the use of their hands to grasp, move and manipulate objects, thus enabling them to effectively operate a writing instrument. Prior to beginning formal handwriting lessons, educators should design activities that enhance the development of fine motor skills.

Recent studies have demonstrated the impact of instructional strategies on the development of handwriting. Multi-sensory approaches to instruction that utilize a combination of visual, tactile and kinesthetic experiences provide learners with an enhanced ability to understand and retain information about letter shapes (Bara & Gentaz, 2018). Examples of how this can be achieved are through tracing letters in sand, air-writing, or forming letters with clay prior to transferring the task to using pencils and paper. Methods such as these are aligned to the Motor Learning Theory, which states that to acquire new motor skills, learners require opportunities to practice, receive feedback and utilize multiple senses (Schmidt & Lee, 2019). These methods are especially helpful to learners who may be struggling with either fine motor control or difficulties with visual-motor integration.

Additionally, teacher modeling and guided practice represent other key components of effective handwriting instruction. Teacher demonstrations of proper letter formation, posture, etc. help students establish mental images of the correct movement sequences involved in the writing process. Modeling is then followed by the learner being provided with opportunities to practice independently, allowing for the eventual internalization of the proper handwriting patterns (Cameron & Graham, 2021). Additionally, educator-provided feedback to the student during guided practice enables the learner to refine their technique and avoid developing inappropriate writing patterns. As learners become more experienced, they eventually develop independence, demonstrating the associative and autonomous phases of the Motor Learning Theory outlined by Fitts and Posner (1967).

Another area of literature that was studied included the influence of curriculum and resources on the provision of handwriting instruction. Handwriting is included within the Language and Literacy component of the South African Curriculum and Assessment Policy Statement (CAPS); however, it is reported that there are variations in how well handwriting is implemented by schools due to differing levels of available resources (Department of Basic Education [DBE], 2019). There are some educators that primarily utilize the CAPS workbooks to teach handwriting, while others develop their own materials that address the varied needs of learners. A study conducted by Pretorius and Spaull (2020) found that the context of the classroom environment, such as the

number of students in a class, availability of educational resources, and level of teacher training, greatly influences the quality of handwriting instruction in the Foundation Phase.

Finally, research demonstrates that professional development and teacher training are two of the most significant factors for providing high-quality handwriting instruction. Research conducted by Graham and Harris (2019) indicates that many educators do not possess formal training in handwriting pedagogy and therefore depend upon experience-based methods rather than evidence-based methods of teaching handwriting. Educators who participate in ongoing professional development workshops focused on handwriting stages, assessment techniques and interventions can improve the quality of their instructional delivery. Educators who possess both theory and practical knowledge can better support learners who are experiencing difficulty with handwriting, resulting in greater legibility, fluency and overall literacy achievement.

Furthermore, current research is exploring the relationship between handwriting and digital learning environments. Although technology is becoming more prevalent in early childhood education, researchers warn against the abandonment of handwriting instruction (Kushki et al., 2020). Research has proven that handwriting engages areas of the brain that are responsible for memory and reading comprehension more so than typing (James & Engelhardt, 2022). Handwriting should not replace technology; instead, it should be used in conjunction with it to enable learners to develop both traditional and digital literacy skills. The balanced integration of handwriting and digital tools promotes the fine motor development and cognitive engagement of learners in meaningful ways.

Lastly, the cultural and contextual factors also affect handwriting instruction. Multilingual and multicultural classrooms present additional challenges to teachers, including differences in exposure to print and language barriers among learners (Mphahlele & Mudzielwana, 2022). Teaching handwriting in culturally responsive ways that incorporate learners' linguistic backgrounds and familiar vocabulary enhances engagement and comprehension. In addition, inclusive approaches that address learners with developmental delays or disabilities are equally important. This approach to teaching handwriting aligns with international education goals that promote equity and inclusion in early learning environments (UNESCO, 2023). Therefore, effective handwriting instruction must consider the diverse developmental, cultural, and contextual needs of learners to ensure that all children develop the fine motor and cognitive bases required to achieve literacy success.

Theoretical framework

This research is grounded in the Motor Learning Theory. The Motor Learning Theory is based upon the science of movement and how we learn the movement skills involved in handwriting. The Motor Learning Theory explains how we move, how we learn to move, how we retain our ability to move and how we transfer our ability to move from one situation to another through practice, feedback and adaptation over time. Handwriting is a complex fine motor skill that requires the integration of visual perception, motor planning, muscle control and cognitive processing. Motor Learning Theory explains that there are three primary stages of learning movement skills: the cognitive stage, the associative stage and the autonomous stage (Fitts & Posner, 1967). During the cognitive stage, learners become familiar with the movement task and begin to develop basic motor patterns. During the handwriting task, this would mean that learners recognize the shape of letters, learn to hold a pencil correctly and understand how to form letters. The associative stage refers to refinement of movements through repetitive practice and teacher feedback. Learners at this stage will write with increased accuracy and coordination. The autonomous stage is reached when the learner can perform the movement task automatically, i.e., without conscious thought. The Motor Learning Theory supports the belief that the most effective instructional strategies to help learners transition through the stages of motor learning include guided practice, multi-sensory approaches, repetition, feedback and scaffolded support. Additionally, the Motor Learning Theory supports the notion that feedback and reinforcement are critical components of the learning process that teachers provide to learners to assist them in achieving proficiency in handwriting.

Motor Learning Theory informs educators in the Foundation Phase how to sequence handwriting instruction, develop strategies that meet learners' developmental needs and promote opportunities for consistent, purposeful practice. The Motor Learning Theory has relevance in the early years of schooling (Grade 1-2), as learners are developing the fine motor control required to produce legible handwriting. Educators who structure their instruction in accordance with the stages of motor learning can better support learners' development of handwriting, learners' fine motor coordination and the foundational skills required for successful academic performance.

Motor Learning Theory further identifies the significance of variability in practice and contextual interference in promoting the acquisition and retention of motor skills. Schmidt and Lee (2019) indicate that learners benefit more from varying practice conditions than from repetitive drill practice alone. Varying practice conditions

challenge learners to adapt and refine their motor responses, which leads to better transfer of the skill to other situations. Educators in Grade 1 classrooms can apply this principle by incorporating handwriting practice into various subject areas, e.g., writing numbers in math or labeling pictures in life skills, to provide learners with opportunities to reinforce handwriting in meaningful and engaging ways.

An additional implication of Motor Learning Theory is the emphasis on intrinsic and extrinsic feedback during the learning of motor skills. Intrinsic feedback is generated through learners' sensory experience, e.g., feeling pencil pressure or observing the spacing between letters, whereas extrinsic feedback is provided by the educator through verbal comments or demonstrations (Magill & Anderson, 2021). To optimize learners' handwriting instruction, educators should utilize a balance of these feedback sources by enabling learners to self-assess their work and providing corrective feedback. Providing frequent and constructive feedback enables learners to modify their motor output, thus increasing their control over letter formation and letter spacing and contributing to the development of fluent and legible handwriting.

Finally, Motor Learning Theory supports the utilization of multi-sensory instructional approaches that engage learners' tactile, visual and kinesthetic modalities. Research conducted by Bara and Gentaz (2018) found that children who learn handwriting using multi-sensory methods, including e.g., tracing letters in sand, creating shapes with clay, or writing in the air, show superior gains in letter recognition and fine motor coordination. Multi-sensory instructional approaches activate multiple neural pathways, resulting in enhanced learning effectiveness and retention. As such, educators should incorporate tactile and kinesthetic activities into the initial hand-writing lessons of their learners to enhance learners' motor memories and engagement.

Motor Learning Theory also recognizes the role that motivation and reinforcement play in maintaining motor learning. Learners progress more quickly when they are motivated, receive rewards for their efforts and have attainable goals. An autonomy-supportive and motivating learning environment improves both the quality and retention of motor skills (Wulf & Lewthwaite, 2016). Educators can achieve this in handwriting instruction by acknowledging learners' improvements, establishing individualized writing objectives and creating a supportive classroom environment in which learners feel comfortable taking risks and viewing errors as a natural component of the learning process. Educators who implement motivational strategies in conjunction with motor learning strategies can significantly increase learners' persistence and confidence in completing handwriting tasks.

Motor Learning Theory justifies scaffolding of instruction by providing a rationale for reducing instructional support as students acquire motor proficiency; as such, during initial stages of development, students will likely need visual models, tracing guides, and step-by-step demonstration, etc., as instructional support is removed over time and students begin to develop motor skills and eventually automaticity of those skills. The developmental process of instructional support mirrors the developmental process of Fitts and Posner's (1967) Stages of Learning and represents an example of "best practices" in Differentiated Instruction. Therefore, Motor Learning Theory not only illustrates how students develop their handwriting skills, it also provides an evidence-based structure to assist educators in developing more effective methods of teaching handwriting in early childhood settings.

2. Method

This qualitative research design was chosen to obtain a deep understanding of the instructional strategies employed by Grade 1 teachers. Qualitative research is particularly well-suited to this study because it permits the collection of rich and detailed descriptions of participants' experiences, perceptions, and contextual realities. Additionally, the combination of multiple data collection methods, including interviews and document analysis, facilitated triangulation which increased the credibility of the results. This study has been developed from the perspective of the interpretivist paradigm. As the interpretivist paradigm seeks to understand the lived experiences, beliefs, and practices of teachers from the teachers' own points of view, it allows the researcher to consider the meanings assigned by Foundation Phase teachers to the instructional strategies they employ to enhance the development of handwriting skills. Furthermore, the interpretivist paradigm creates space to consider the context-specific factors that affect teaching practices in real classroom settings.

The population targeted for this study were Foundation Phase teachers (Grade 1) in primary schools in a defined district. The three schools identified for the study represented a diverse cross-section of teachers. A purposive sampling strategy was employed to identify participants with the most relevant experience of teaching handwriting and who were able and willing to provide their insights regarding the instructional strategies employed to support the development of handwriting skills in Grade 1 students. In addition, an attempt was made to include teachers with different levels of experience to generate a broad spectrum of perspectives. The study employed three qualitative data collection methods to gather a wide range of data that were relevant and comprehensive. Semi-structured interviews, which were completed with participating Grade 1 teachers to explore their instructional strategies, the challenges they experienced, and their views on the development of handwriting

skills in young children, were used as one method of collecting qualitative data. The flexibility inherent in semi-structured interviews permitted the researcher to further investigate developing issues during the interview. Non-participant classroom observations, which permitted the researcher to observe how the instructional strategies of handwriting were operationalised in the classroom, were used as another method of collecting qualitative data. Finally, the researcher utilised document analysis as a third method of collecting qualitative data to assess how handwriting activities were conceptualised, planned, and assessed through the examination of relevant documents such as lesson plans, learner's handwriting books, and CAPS workbooks.

The qualitative data gathered through the semi-structured interviews, non-participant classroom observations, and document analysis were analysed using thematic analysis. Thematic analysis is a process where the researcher becomes familiar with the data; generates an initial set of codes to describe the data; searches for patterns in the data; and organises those patterns into meaningful themes. The researcher systematically evaluated all of the data collected via the semi-structured interviews, non-participant classroom observations, and document analysis to determine what common instructional strategies, challenges, and contextual influences existed relative to the provision of handwriting instruction. Prior to conducting this study, the researcher obtained ethical clearance from both the University Research Ethics Committee and the Provincial Department of Education. Informed consent was formally sought from each participant prior to the commencement of the study. Each participant was provided with a formal explanation of the purpose of the study and the way the study would be conducted and was assured of their right to withdraw from the study at any time without penalty or consequences. All the data collected during this study were kept confidential and were used solely for the purpose of completing the requirements for a degree at a university.

3. Findings

The study findings are presented in line with the main themes which arose from the interview and documentary data, along with observational data from classroom environments. The study consisted of 3 primary schools located within KwaZulu-Natal and consisted of 9 Grade 1 Foundation Phase teachers, who shared their experiences and practices concerning handwriting instruction.

The findings are based on the following themes:

Theme 1: Emphasis on fine motor development

Teachers were very clear in the emphasis placed on developing children's fine motor skills as a basis for handwriting. Examples of activities that assisted in strengthening the muscle in the fingers of the children and improving the ability to control a pencil were as follows: cutting; colouring; threading beads; and clay modeling.

"Before I even begin to teach letters, I allow the children to do hand exercises, colouring, and use clay to develop their hand coordination." (Participant 1)

The integration of these activities was observed during morning routines and learning canters.

Theme 2: Multi-sensory approaches to letter formation

Many teachers utilized multi-sensory instructional methods to assist children with forming letters. Sand trays, finger-tracing, chalk boards, air-writing and eventually paper and pencil were all used to support the transition from forming letters to writing.

"When children use their fingers to trace letters in the sand or on another child's back, they will always be able to remember." (Participant 3) These strategies proved particularly useful for children who experienced difficulty with recognizing letters and/or children who had difficulty focusing due to ADHD.

Theme 3: Use of CAPS workbooks and Teacher Developed Resources

All participants relied primarily on the Department of Basic Education's CAPS aligned workbooks for formal handwriting activities. In addition to the CAPS workbooks, many teachers created their own worksheets and tracing activities to provide additional opportunities for students to learn and to provide differentiation of instruction.

Document analysis revealed variability in both quantity and quality of handwriting activities available at each of the three participating schools and depended largely on the availability of resources and the creative capacity of the teachers.

Theme 4: Modeling & Guided Practice

Participants indicated that they modeled handwriting on the board on an almost daily basis and encouraged guided practice whereby learners copied letters and words while being supervised by a teacher.

"I write the letter on the board, demonstrate how to form the letter, and then we do it together. I correct them as they write." (Participant 5)

Observation confirmed the consistent use of whole-class demonstration followed by individual practice with teacher feedback.

Theme 5: Barriers to Effective Implementation of Handwriting Instruction

Despite the effort made by the participants to implement strategies to facilitate handwriting development there were several barriers to successful implementation: overcrowding in classrooms prohibited adequate individualized instruction. Limited access to resources (pencils, workbooks) limited the frequency of opportunity to practice handwriting. Some learners had trouble holding a pencil correctly due to developmental delay; however, no additional support was provided to these learners.

"There is no way some learners can hold a pencil, but I don't have the time to help every single learner." (Participant 2)

Theme 6: Need for Professional Development

In general, most teachers expressed a desire for professional development and workshops to focus specifically on handwriting instruction and to identify and support struggling learners.

"We never received adequate training in handwriting. We simply utilize what we believe to be successful." (Participant 4).

The findings indicate that Grade 1 teachers utilize a variety of strategies including fine motor activities, multi-sensory techniques, CAPS workbooks, and teacher guidance to support handwriting development. However, the constraints associated with large class size, limited resources, and limited training impede the effectiveness of these strategies. Teachers clearly articulated a need for structured support and ongoing professional development to enhance their ability to instruct handwriting effectively.

Discussion

Guided practice & modelling

Teacher modelling and guided practice, as demonstrated within classroom settings, demonstrate alignment to Bandura's Social Learning Theory (1977). According to the Social Learning Theory, learners acquire new skills and behaviors when they witness a model perform a behavior (demonstrate). Teachers model the letter formation on the whiteboard, guide students during their practice session and provide feedback immediately after the student has completed the task. Graham et al. (2022) also support the modelling of correct letter formation by suggesting that it will improve accuracy and promote automaticity. The modelling, along with the gradual release of responsibility from teacher-led guided practice to student-led independent writing, creates an environment for students to develop confidence and mastery in their handwriting, allowing teachers to quickly identify and correct errors made during the writing process.

Challenges in Utilizing Evidence-Based Strategies

Although participants were committed to improving handwriting instruction, several challenges prevented them from utilizing evidence-based strategies. Some of these challenges included overcrowded classrooms that did not allow teachers to spend sufficient time providing individualized support to students; inadequate time for providing support to students and; inadequate resources. Comments from participants, such as "Some learners can not even hold a pencil correctly and I do not have time to assist all of them," exemplify some of the practical issues that affect instructional decisions. The findings presented above are similar to those found in Pretorius and Spaul (2020), who emphasized that overcrowding and resource shortages negatively impact instructional quality and individualized learner support in South Africa's primary schools. Students with developmental delays were also identified as needing additional support, and therefore, there is a need for providing additional support services and targeted interventions.

Need for Continuing Professional Development

Recurring concerns expressed by the participants were the lack of formal training in handwriting instruction. Participants stated that they were uncertain about the "best" method to use in teaching handwriting and instead relied on personal experience, intuition, or peer suggestions. The gaps in professional knowledge identified by the participants support the findings of Mulovhedzi and Mudielwana (2023), who stressed the importance of continuing professional development for teachers to equip them with evidence-based strategies for teaching early literacy, including handwriting. Without structured training and support, teachers may be unable to accurately

identify and provide support to students having trouble with handwriting. The expressed desire for workshops and training demonstrates the value of creating professional learning communities that are focused on supporting early writing pedagogy and student needs.

Implications of the study

There are many significant implications of these research results for teachers, school administrators and policymakers who seek to improve handwriting instruction in first-grade classrooms. First, there are implications for the way teachers teach handwriting; specifically, they suggest that teachers use a structured and sequential approach to handwriting instruction and focus on the specific components of handwriting, including posture, pencil grip and fine motor coordination. Multi-sensory approaches to teaching, scaffolding and differentiated instruction have been found to improve students' handwriting abilities. Second, there were implications for teacher preparation and professional development; the study indicates that programs for pre-service and in-service teachers should include comprehensive modules on the development of handwriting. By equipping teachers with the practical knowledge and strategies needed to support their students with handwriting difficulties, they will be able to meet the diverse needs of their students. Finally, there were implications for curriculum planning; the study indicates that there are gaps in the way schools are currently meeting students' handwriting needs; schools and policymakers should develop clear curriculum guidelines that prioritize the instruction of handwriting and provide benchmarks that reflect the developmental stages of students. Furthermore, schools and policymakers should allocate sufficient instructional time for handwriting and provide classrooms with the necessary materials and resources to support effective teaching of handwriting.

In addition to the above-mentioned implications, the research indicated that professional learning communities (PLC's) can play a significant role in supporting and enhancing teachers' ability to instruct students with handwriting difficulties. PLC's allow teachers to share best practices, share resources, and work together to address common problems and challenges associated with developing students' handwriting. According to Cameron and Graham (2021), PLC's help facilitate collaborative teacher reflection and peer observation which leads to increased instructional consistency and professional growth among teachers. By establishing a shared culture of learning and collaboration, schools can continue to grow and improve their ability to support and nurture students' handwriting development.

Finally, the study had implications for the use of technology to support the instruction of handwriting. Digital tools are often considered as having the potential to replace handwriting instruction; however, they can also be useful in providing additional support to the instruction of handwriting if used appropriately. Interactive white boards, tablet apps designed to provide letter tracing experiences, and fine motor skill games, are examples of digital tools that can be used to provide a variety of ways to engage students while reinforcing traditional handwriting instruction (Kushki et al., 2020). In order to maximize the effectiveness of using digital tools to support the instruction of handwriting, teachers should receive training on how to utilize technology to supplement rather than replace handwriting instruction. Using technology to support the instruction of handwriting not only enhances engagement among students, but also enables teachers to receive immediate feedback and to quickly assess and address handwriting difficulties.

Early identification and intervention regarding students experiencing difficulty with handwriting is another implication of the study. Teachers must be equipped with the diagnostic assessments necessary to recognize fine motor or perceptual challenges in young students. The need to provide early support and remediation is emphasized by the research conducted by Engel-Yeger and Nagauker-Yanuv (2022), as early interventions have the potential to prevent long term handwriting and literacy challenges. Therefore, schools should collaborate with occupational therapists and learning support specialists to develop intervention programs that address individual student needs and promote inclusive education and equitable learning opportunities for all students.

Finally, the study indicates that handwriting instruction should not be isolated from the larger process of literacy development. Handwriting instruction is closely linked to reading comprehension, spelling, and written composition (Medwell & Wray, 2020). Therefore, integrating handwriting instruction into literacy lessons can create meaningful relationships between the two subjects, ultimately enhancing students' academic performance. Curriculum designers and teachers should explore cross curricular approaches to incorporate handwriting instruction into reading, language, and creative writing activities. This type of integration will ensure that handwriting continues to be a relevant and functional skill in today's educational environment.

Conclusions

Based on the findings from this study it is therefore recommended that teachers receive training in the teaching strategies that specifically promote handwriting skills in learners of Grade 1. To this end, the in-service training of

teachers should comprise of providing teachers with knowledge regarding the developmental stages of handwriting, of development of the fine motor skills and of multi-sensory teaching strategies. Schools should also ensure that sufficient time is allocated on the timetable for handwriting so that it can be augmented with the relevant resources, such as tracing paper, grips and aids for visual learning. To uplift the teaching of handwriting in these classes, curriculum developers should be encouraged to formulate clear guidelines as to standards regarding handwriting in the Foundation Phase. Further, the school leadership should ensure that class sizes can be reduced in order that more individualisations can be given during handwriting lessons. Collaboration between teachers, occupational therapists and curriculum specialists will be required in order to provide holistic support to learners in the teaching of handwriting. Graham et al., (2018) state that early identification of learners who have fine-motor problems can be facilitated by interdisciplinary collaboration, which will enable the timeous initiation of intervention. Using the principles of occupational therapy in the classroom, teachers can develop specific exercises for the learners in order to stimulate strength in the hands, improved posture and fine motor dexterity in pencil control. Not only will this have the result of improved fluency in handwriting, but it will also enhance the learners' overall motor co-ordination and confidence in tasks to be undertaken in writing. Moreover, parents should be encouraged to become involved in the development of the handwriting of their children. Research such as that of Asuman and Ceyland (2021) indicates that when parents instil a love for the fine motor activities as well as for letter formation in their children at home, there is a marked improvement in handwriting, both with respect to legibility and endurance. The schools can assist this co-operation with events such as workshops for parents, handwriting kits sent home, as well as continued communication regarding the progress made by the Learners in handwriting. By improving the home-school connection in terms of practice, there will be continuity and support for those learners who need further reinforcement outside of the classroom.

Finally, it is incumbent upon the policymakers and educational authorities to perceive handwriting to be a basic foundational skill, which is fundamental to literacy, as it has consequences for academic achievement in the learners. Research by Medwell and Wray (2020) has shown that fluency in handwriting is related to other processes such as spelling, composition and comprehension. Consequently, further commitment to expenditure around training for teachers, classroom material and curriculum development is required in order to promote high quality writing instruction to learners. With the best training available for teachers, with resources for them to use and a structured curriculum for them to use for direction, they will be better able to impart writing skills to the learners, resulting in improved academic capability and sound foundations laid for future literacy.

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