



Grade 1 teachers' experiences of learners' pre-handwriting challenges

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DECLARATION

I, the undersigned, hereby declare that the work contained in this dissertation is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

A handwritten signature in black ink, appearing to read "Annandale". The signature is written in a cursive style with a large initial 'A'.

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SUMMARY

In the current curriculum of the South African Department of Education's *Curriculum Assessment Policy Statements (CAPS)*, handwriting is a prescribed activity in the subject *Home Language*. The policy document states that, before teaching handwriting to Grade 1 learners, a pre-writing programme should be followed. Although the guidelines are provided in the CAPS document for time allocation of handwriting instruction, an actual pre-writing programme does not exist. It is left to the discretion of the teachers in the Foundation Phase of a learner's school career. Should early childhood teachers have insufficient training and pedagogical knowledge, they would not be able to deliver quality teaching. According to the 2011 UNESCO report, only 50% of pre-primary school teachers are qualified and 80% of primary school teachers are qualified.

This study implemented a qualitative approach, as it would allow for optimal data collection. Data were collected during focus group discussions. The teachers provided evidence from the written work of ten learners who had been identified by eight Grade 1 teachers as experiencing challenges with pre-handwriting skills. With a vast amount of young learners experiencing pre-handwriting challenges and not having access to occupational therapy services, it is essential that teachers are made aware of the skills needed for handwriting, as identified in this research project, to enable them to assist the struggling learners in their care. This research has shown that in order to successfully acquire handwriting, the following skills are necessary: fine motor skills, problem solving skills, proper pencil grip, the right writing tools, visual memory, correct letter formation, midline crossing ability, and a sufficient sense of direction and space; all of which can be enhanced through intensified training of teachers for Grade R. Furthermore, proper exercises to correct low muscle tone and ensure reversals are necessary, while the proper seating position can be ensured by having the correct furniture size. These areas of concern can now be used to compile a pre-handwriting programme in order to fill the gap in the CAPS policy document.

KEYWORDS

Curriculum Assessment Policy Statements (CAPS), Grade 1, Teacher¹, Pre-writing challenges, Experiences

¹ The gender-specific pronoun "she" is used in this document. This, however, is not meant to exclude the likelihood of males also being appointed in the early years.

OPSOMMING

Die huidige *Kurrikulum- en Assesseringsbeleidsverklaring* (KABV) van die Departement van Basiese Onderrig in Suid-Afrika bepaal dat leerlinge onderrig moet ontvang in handskrif in die vak *Huistaal*. Alhoewel die beleidsverklaring vereis dat 'n pre-skryfprogram gevolg moet word alvorens Graad 1 leerders in handskrif onderrig word, en die riglyne in die beleid voorsiening maak dat tyd vir handskrifonderrig afgestaan word, bestaan daar nie 'n pre-skryfprogram nie. Derhalwe word handskrif aangebied na die goeddunke van die Grondslagfase onderwysers. Indien hierdie onderwysers nie voldoende opleiding ontvang het of oor voldoende pedagogiese kennis beskik nie, word aangevoer dat kwaliteitonderrig nie sal plaasvind nie. Volgens UNESCO se 2011 verslag is slegs 50% van pre-primêre onderrigpersoneel en slegs 80% van laerskoolonderwysers gekwalifiseerd in die Grondslagfase.

'n Kwalitatiewe benadering is gevolg in hierdie studie sodat die insameling van data effektief kon wees. Dit is tydens fokusgroepbesprekings bekom. Die agt Graad 1-onderwyseresse het voorbeelde verskaf van geskrewe werk van tien leerders wat geïdentifiseer is met pre-handskrifprobleme. Aangesien talle jong leerders nie toegang het tot die dienste van arbeidsterapeute nie, dit van die uiterste belang dat Grondslagfase-onderwysers deeglik bewus gemaak moet word van die vaardighede wat benodig word om die suksesvolle bemeestering van handskrif van hulle leerders te verseker. Vaardighede wat geïdentifiseer is in hierdie studie sluit in fynmotoriese vaardighede, probleemoplossing, potloodgreep, visuele geheue, lettervorming, opleiding van Graad R onderwysers, lae spiertonus, midlynkruising, skryfapparaat, rigting en ruimte, omruilings en skryfpostuur. Hierdie elemente kan nou aangewend word in die samestelling van 'n pre-handskrifprogram om die gaping in die KABV –dokument te vul.

SLEUTELWOORDE

Kurrikulum- en Assesseringsbeleidsverklaring (KABV), Graad 1, Onderwyseres²,
Pre-skryfprogram

² Hoewel die vroulike vorm gebruik word in hierdie dokument, word die moontlikheid van mansonderwysers in die Grondslagfase geensins uitgesluit nie.

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Abbreviations

CAPS	Curriculum Assessment Policy Statements
DoBE	South African Department of Basic Education
HPCSA	Health Professions Council of South Africa
IDEA	Individuals with Disabilities Education Act
OT	Occupational therapist
SIAS	Screening, Identification, Assessment and Support

CHAPTER 1: INTRODUCTION

“I like the process of pencil and paper as opposed to a machine. I think the writing is better when it's done in handwriting.” Nelson DeMille (2017)

“Handwriting is a spiritual designing, even though it appears by means of a material instrument.” Euclid (C.300BCE)

1.1 Introduction

In the current curriculum of the South African Department of Education’s Curriculum Assessment Policy Statements (CAPS), handwriting is a prescribed activity in the subject Home Language. The CAPS policy document states that, before teaching handwriting to Grade 1 learners, a pre-writing programme should be followed “to develop visual discrimination, gross and fine motor and hand-eye coordination, body image, etc.” (Department of Basic Education, 2011:19). As a previous Foundation Phase, Grade 1 teacher in an urban government school, I was required to follow policy regulations to the letter and to give evidence of this in my daily lesson planning and assessment tasks; I was also required to submit returns to the Department of Basic Education, stating that I had fulfilled the curriculum requirements. I have been a Foundation Phase teacher for 26 years, and I have taught mostly Grade R and Grade 1, where the acquisition of perceptual skills are paramount. These perceptual skills translated into preparing the Grade 1 learner for formal handwriting. While attempting to teach handwriting to learners from different pre-schools in my Grade 1 classroom, and discussing teaching methods with my colleagues, it became evident that Foundation Phase teachers interpret handwriting instruction in different ways. Although guidelines are provided in the CAPS document for time allocation and regularity of handwriting instruction, I realized that an actual pre-writing programme does not exist.

In South Africa, there is no official prescribed pre-writing programme set by the Department of Basic Education within the national CAPS policy, as yet. It is left to the discretion of the teachers in the Foundation Phase of a learner’s school career. Loubser, Pienaar, Klopper, & Ellis (2016: 55) argue that if early childhood teachers have insufficient training, subject and pedagogical knowledge, they would not be able to create an environment conducive to quality learning. Furthermore, Smit (2011: 318) mentions that in many instances teachers’ capability and commitment is poor, which makes the failure to address incompetence or retraining inexcusable. The aspects that Smit (2011: 318) mentions, capability and commitment, are factors that presently contribute to the current situation in South African schools, and further negatively

impact on the lack of guidance regarding a pre-writing programme in the CAPS policy. Unfortunately, not much progress has been made since 2011, according to the 2016 UNESCO report, as only 50% of pre-primary school teachers are qualified and 80% of primary school teachers are qualified (UNESCO, 2016: 331).

Zylstra & Pfeiffer (2016:1) cite several authors (Feder & Majnemer, 2007; McCarney, Peters, Jackson, Thomas & Kirby, 2013; Vander Hart, Fitzpatrick & Cortesa, 2010) in emphasising that, despite technological advances, handwriting is still an important skill and necessary for success at school. Various internationally and nationally known writing programmes³, reinforce the importance of handwriting in the Foundation Phase, as handwriting makes children aware of differences in letters which, in turn, enhance reading fluency.

The *Write Start* handwriting programme serves as an intervention programme and benefits learners by increasing writing fluency and legibility. It also serves as proof that learners benefit when teachers and Occupational Therapists (OT) collaborate (Persch, Cleary, Tanner, DiGiovine, Rybski, Teaford, Page, & Darragh, 2014:650). *Handwriting Without Tears* was developed to enable parents to also assist learners with handwriting difficulties, supporting the ongoing assistance which teachers provide (Patton & Hutton, 2016:273). The *Handwriting Without Tears* programme (Olsen: 2015) was extended to the *Handwriting Without Tears – Get Set for School* (HWT-GSS) programme. This programme was designed to help young learners develop the prewriting skills necessary for kindergarten by adding playing, singing, motor skills, social and emotional development, body awareness skills, cognitive and language skills, sensory processing and visual–perceptual skills (Olsen & Knapton, 2008 in Lust & Donica 2011: 561). All these programmes are focused on the child’s development of spatial awareness, visual motor perception and fine motor coordination; all these are aspects that aid the child in forming the basic skills for academic progress and attaining his (or her) developmental milestones.

As a teacher I appreciated the neat presentation of a learner’s written work, which amounted to the learner’s handwriting being neat, correct spacing between letters and correct letter formation.

1.2 Background: An International Timeline

It was common up to the early 1990s for children in the United States of America to be referred

³ See *Write Start* (<http://www.write-start-handwriting.org/writing-application/about/index.html>), *Magic Link Handwriting Programme* (www.magiclinkhandwriting.com) and *Handwriting Without Tears* (<https://www.lwtears.com/hwt/details>).

to occupational therapists when they showed fine motor deficiencies. For instance, both the Individuals with Disabilities Education Act (IDEA) of 1990 and the Disabilities Education Act (DEA) of 1990 supported this practice (Public Law 101-476)]. This law was extended in 2004 in order to bring specialists on board with the educator when planning, implementing and assessing the learning of the learner with special needs (National Center for Learning Disabilities, 2006:8). During these early days researchers set out to determine how much time in a school day was spent on the fine motor and handwriting activities. McHale & Cermak (1992) spent time in an elementary classroom to explore this aspect. They found that 30% to 60% of the time in a classroom was spent on fine motor activities, and of this time, the main part was handwriting tasks (McHale & Cermak, 1992:898). McHale & Cermak argue that with such a large portion of classroom time dedicated to aspects of fine motor activities, especially handwriting, problems arising from these tasks would have a major impact on the child (McHale & Cermak 1992:898). Two decades later, it seems that the situation has not changed drastically.

Case-Smith (1996:54) invited occupational therapists into the classroom to physically attend to learners experiencing fine motor difficulties. These learners showed “significant progress” at the end of the year and they had “slightly improved in functional performance” from once a week interventions (Case-Smith, 1996:54). To further assess the situation in the classroom, Haly, Coster, Ludlow, Haltiwanger & Andrellos (cited in Case-Smith, 1996:53), designed the *Pediatric Assessment of Disability Inventory* (PEDI, 1992) model of evaluation. This model, which is still being used today, suggests a hierarchy of motor outcomes, such as self-care, maneuverability and strength (Coster, Dumas, Fragala-Pinkham, Haley, Kao, Kramer, Ludlow & Moed, 2010: 2). Furthermore, teachers are becoming more aware of the child’s needs and difficulties and teachers have become more proactive in implementing occupational therapy strategies or making referrals (Chiu, Naseer, Reid, Sinclair & Wehrmann, 2006:221). OTs identified the need for teachers to become more knowledgeable of how children learn to write (Cramm & Egan, 2015:175) in order to fully support these early grade learners.

1.3 The South African context

The experience in South Africa is no different to the international trends. With the inclusion policy⁴ in place (SIAS 2014:1) and in line with *Education White Paper 6* (Education White Paper 6, 2001) teachers have to either assist or refer the learner when problems are identified

⁴ The Policy on Screening, Identification, Assessment and Support (SIAS) provides a standard set of procedures educators have to follow when learning difficulties are suspected. These procedures allow for assessment, and subsequently, the provision of additional support to the learner.

(SIAS 2014:24). However, in South Africa, two problems further impact on the child's ability to comply with Grade 1 requirements. Firstly, many children start their primary school career without having attended a pre-school Grade R year, in which the child would have been exposed to a perceptual-motor programme (Pienaar, Barhorst, & Twisk, 2013:371). With the lack of this initial perceptual-motor exposure, a significant impact on the child's motor coordination and perceptual skills is noted (Pienaar *et al.*, 2013:370) and children often struggle with fine-motor tasks. Secondly, according to the South African Education Department of Education Admission Policy (2007), a child may enter Grade 1 at age 5, turning 6 before the 30th of June of that year, or age 6, turning 7. This results in learners with an age difference of up to 2 years in the same class (Loubser *et al.*, 2016: 55), creating a further challenge within the Grade 1 class environment. Therefore, by June of the year when a child enters formal schooling (the middle of the school year in South Africa), up to one-third of Grade 1 learners show poor academic performance, which Pienaar *et al.* (2013: 74) argue can be ascribed to the relationship between visual-motor integration, socio-economic status and mastering of reading, writing and mathematics. These authors confirm that visual-motor integration, visual perception and kinaesthetic awareness are vital to success in mathematics, reading and attention (Pienaar *et al.*, 2013: 376). Therefore, with the neglect or lack of a mandatory perceptual-motor programme such as a standardized pre-writing programme in these formative years, success, especially for the young child or one that did not have exposure to a Grade R perceptual-motor programme, tends to be problematic when acquiring the basic skills. In another South African study, Loubser *et al.* (2016: 55) confirmed that school readiness was not determined by the chronological age of the child, but rather by the maturity of the learner, suggesting that learners develop at their own pace.

For this reason, it is essential that the Department of Basic Education (DoBE) define, and provide a pre-writing programme to Foundation Phase teachers in the South African educational system. Having access to such guidelines would provide parameters within which all teachers (established and new teachers) can be guided on what to expect from each learner with regard to handwriting and fine-motor development.

Furthermore, in providing a standardized pre-handwriting programme, it makes it possible to undertake a uniform assessment of each child against an appropriate age and developmental standard. This guideline will facilitate a teacher's decision to either support the learner, or if the problems appear to be serious, to refer the learner to an occupational therapist; both of these

actions are exceptionally important for learners experiencing fine motor difficulties in the Foundation Phase.

1.4 Problem statement

The South African Department of Basic Education (DoBE) prescribes that a pre-writing programme should be followed before teaching formal handwriting in Grade 1 (DoBE, 2011:19). Yet no pre-writing programme has been provided or prescribed, leaving Foundation Phase teachers to use their own discretion as to what a pre-writing programme should entail, how it should be implemented and how it should be assessed. No recommendations are given on where the teacher should start or who the teacher could turn to for recommendations on a pre-writing programme. This leads to varied “personalised” programmes that educators think are applicable and appropriate. For the more experienced teacher these “opinions” may be suitable as they have years of experience in their favour; however, for the younger generation entry level teacher, their limited experience puts them at a disadvantage and can literally jeopardise the child’s entire academic path forward. As a teacher with twenty-seven years of experience, I have come to realize that perceptual development such as spatial awareness and visual motor perception have an influence on a learner’s handwriting and many of these concepts are not fully thought of or even considered by the new generation of teachers.

Thus, in reflecting on this situation, the problem that can be identified is that the DoBE’s CAPS (2011) prescribed handwriting activity for Grade 1 learners is mandatory. However, there is no guidance for this requirement, resulting in a situation that often turns out to be detrimental for young children on their academic path forward. Consequently, the gap observed in the present situation is the lack of guidelines for teachers indicating how handwriting should be taught, or any pre-handwriting programmes for the Foundation Phase teacher to follow in the DoBE CAPS (2011) document, even though handwriting is a mandatory activity.

1.5 Concept clarification

To provide a basic framework for the reader the concepts that are referred to will be briefly defined and discussed. The CAPS document states that before teaching handwriting to Grade 1 learners, a pre-writing programme should be followed “to develop visual discrimination, gross and fine motor and hand-eye coordination, body image, etc.” (Department of Education, 2011:19). In order to achieve this, the following concepts, which were central to this study, will be briefly touched on to create a context for the understanding of the study.

1.5.1 Grade 1

The South African Schools Act of 1996 prescribes that schooling is compulsory for South African children from the age of six. During the year in which they turn 6, they will enter their first year of formal schooling, which will be their Grade 1 year.

(<https://www.brandsouthafrica.com/governance/services/education-services/a-parents-guide-to-schooling>).

1.5.2 Teacher

The traditional teacher is perceived as the adult standing in front of the class, taking control of teaching, learning and discipline in the class. The teacher would provide the information and the learners would regurgitate the information in tests. This, however, has changed. The teacher is now a facilitator of learning, guiding learners in their learning through discovery and dialogue (Göksoy & Akdağ, 2014:2; Karanezi & Rapti 2015:2).

However, the present day teacher is still like the traditional teacher, as they are responsible for the careful planning of lessons, record keeping and assessments (Göksoy & Akdağ, 2014:2); but as already mentioned, they are seen as facilitators. A grade 1 teacher will be the initial teacher that the child meets when they enter the formal schooling environment (Göksoy & Akdağ, 2014:2). Therefore, this teacher has it in her power to either make schooling positive for the child, or create a negative atmosphere that will most probably remain with the child throughout his schooling career.

Grové & Hauptfleisch (1985: 3) state clearly that the teacher is the key person that must engage with the young child on the child's level of development when the young child enters formal learning. Grové & Hauptfleisch (1985: 3) state further that it is the responsibility of the teacher to assess the learner's strengths and weaknesses as early on as possible, and to assist the learner where difficulties may exist.

1.5.3 Experience

The online Oxford dictionary describes *experience* as "The knowledge or skill acquired by a period of practical experience of something, especially that gained in a particular profession." (<https://en.oxforddictionaries.com/definition/experience>). With this in mind, one can deduce that a teacher who has had many years of involvement in the teaching profession will have a vast amount of teaching experience and should be proficient, capable and knowledgeable about the profession. Grové & Hauptfleisch (1985: 3) reckon that, besides the teacher's professional

training, the teacher should also be ever observant in order to be able to identify a child's normal development, when the child's development is lacking, and abnormal behaviour. It is crucial, opine Groveé & Hauptfleisch, (1985: 3) that a teacher's instructive abilities, supervision abilities and leadership capabilities increase continually. This means the teacher should be a lifelong learner, which will increase the teacher's capability and knowledge.

1.5.4 Learners

The learners in a classroom are the persons that act upon their existing knowledge before being guided by the teacher, or taught formally and led to success (Moll, Bradbury & Winkler in Gultig, 2010: 15). Grade 1 learners will, therefore, be the children that have entered into the first formal school year of their academic career.

1.5.5 Pre-handwriting challenges

Feder, Racine, & Majnemer, (2008:69) have identified pre-handwriting skills that could provide challenges to the young learner mastering handwriting. Midline crossing, letter recognition, established hand dominance, pencil grip, eye-hand coordination and posture have been identified as prerequisites for handwriting. It follows that if a child does not attain these skills, or has problems mastering them, it could be considered a pre-handwriting challenge.

1.5.6 The Grade 1 teacher as part of the Foundation Phase

The National Qualifications Framework requires a Foundation Phase teacher (this includes Grade 1 teachers) to be capable of teaching *Home Language*, *First Additional Language*, *Mathematics* and *Life Skills* in Grades 1 to 3. In addition, the Foundation Phase teacher must be able to identify and address barriers to learning (Government Gazette, 38487:26). The duties of the Foundation Phase teacher are described as providing "hands-on" experiences to assist young learners in their development, and assessing learners through observation with the aim of supporting them (DoE, Interim Policy for ECD, 1997:34).

1.5.7 Pre-handwriting skills

Pre-handwriting skills are developed through various writing and drawing activities, such as tracing. The young learner progresses from straight, vertical lines to more challenging lines, such as curves, zigzags, and diagonals (Loubser & Hoogbaard, 2014:3). All these drawing activities help to develop pencil-control. Pre-handwriting skills include postural stability, fine motor skills, pencil grip, kinaesthesia (pencil pressure) and visual motor integration (Banumathe, Sharma & Binu, 2016:20):

1.8 Rationale

As there is no standard pre-handwriting programme which should be implemented in a Grade 1 classroom as part of the daily routine, teachers must consider certain aspects when they engage with the learners. Therefore, in order to explore the experiences of Grade 1 teachers regarding pre handwriting challenges, the following aspects should be considered by the teachers:

The activities should:

- be fun,
- be easy to incorporate into a daily routine and unobtrusive as possible,
- be as inexpensive as possible,
- not take up more than fifteen minutes of the daily programme and
- be integrated into the school day, thereby making the programme more flexible, and facilitating observation while the teacher interacts with the learner.

1.9 Research participants

1.9.1 Sample selection

A sample comprises a subset of the population that could possibly be included in the study and it is obtained in an effort to understand the population from which it is obtained and is a representative selection (Strydom in De Vos *et al.*, 2013: 223, 224) of the population that is being studied. For this study, the sample selection was purposive sampling, with the sampling technique based solely on the judgement of the researcher (Strydom in De Vos *et al.*, 2013: 232), as the sample comprised elements that contained the most characteristics or typical attributes of the population that were required to answer the research question (Strydom in De Vos *et al.*, 2013: 232). Consequently, the researcher invited Grade 1 teachers who had experienced pre-handwriting challenges of Grade 1 learners to be part of a focus group in order to obtain their experiences on the matter. During this focus group session, the Grade 1 teachers were given the opportunity to discuss the most commonly experienced pre-handwriting challenges that they had encountered during their observations of the Grade 1 learners.

1.9.2 Inclusion criteria

Participants of this study were:

- Grade 1 teachers
- Grade 1 teachers who were willing to participate in a focus group and be audio recorded.

1.9.3 Exclusion criteria

All teachers that are not Grade 1 teachers or are teachers that are in a position which does not enable them to observe Grade 1 learners who are struggling with pre-handwriting skills.

1.10 Data collection

1.10.1 Focus group: Grade 1 class teachers

A focus group interview focuses on a particular topic and a debate may ensue, which will contribute to data collection (Nieuwenhuis in Maree, 2016: 95). The focus groups in this research project focused on the challenges that were experienced by Grade 1 learners regarding their pre-handwriting skills. As this research project was conducted with Grade 1 class teachers, the focus groups consisted of eight participants who were all register teachers of their classes. As researcher and facilitator, I created a non-threatening climate for all participants to build on the ideas of others (Nieuwenhuis in Maree, 2016: 96) and freely express themselves. The focus group discussions were based on the idea that interacting within a group would be productive in extending the range of responses and activating forgotten details of experience (Nieuwenhuis in Maree, 2016: 95). Therefore, acting as the facilitator, I encouraged expressions and interactions among participants and utilized questions to initiate and then guide the discussions or clarify aspects (Nieuwenhuis in Maree, 2016: 96). I kept in mind that the focus group was not a natural social setting, nor was the discussion in the focus group a natural conversation. The focus groups provided information on how people talk about a topic and how they respond in a situation where they are exposed to the views and experiences of others (Nieuwenhuis in Maree, 2016: 96). The role of the researcher, therefore, was to facilitate discussion by reassuring colleagues (participants) that any input and all inputs were valuable, and I acted as a referee, to ensure that everyone was afforded an opportunity to raise her point of view. See Appendix 2 for the questions that were posed to the teachers.

1.10.2 Audio-recordings

Flick (2015: 159) recommends audio or video recordings in order to obtain a more comprehensive account of focus group discussions. A portable voice recorder was positioned on the table at each focus group discussion, and a video camera was mounted on a tripod as a back-up recorder.

1.10.3 Field notes

Merriam and Tisdell (2016: 149) and Cresswell (2014: 194) recommend that field notes should be taken as memory might fail the researcher. I was able to take notes during the focus group

discussions and could follow up with questions for clarification on what the teachers had reported.

1.10.4 Transcriptions

Cresswell (2014: 194) provides protocol during interviews that needs to include the date, place, interviewer, interviewees as a heading that I have adhered to. I also reminded the teachers of the research questions and opened the discussions with a starting question. In the transcriptions, spaces were inserted between the questions and teachers' responses. As suggested by Cresswell (2014: 194) the focus group discussions were concluded with a word of thanks and an expression of my appreciation for their willingness to participate in this research project.

1.11 Process of the research

Phase 1:

Two focus groups were held with the Grade 1 teachers who related their experiences of the Grade 1 learners' pre-handwriting challenges. These participants had to be willing to participate and gave permission to be voice recorded. Focus groups were deemed the best data collection method as it would provide the best form of data which is robust and would shed light on any topic or issue (Grey, 2014: 469). Focus groups provide opportunities for the clarification of responses, for posing additional probing questions and for the observation of non-verbal responses (Grey, 2014:469). The researcher took note of how each member of the focus group responded, and correlated experiences they have had regarding the teaching of pre-handwriting skills. A thematic guideline was used to initiate the focus group's interactions, to prevent the participants from veering off the topic.

The participant guidelines were:

- *What general challenges do you as Grade 1 teacher experience with Grade 1 learners regarding pre-handwriting?*
- *Are there any other experiences that you think are noteworthy regarding pre-writing challenges of Grade 1 learners?*
- *What resources do you think are essential to teaching pre-handwriting skills to Grade 1 learners?*
- *In your opinion, what is the best method to present a pre-handwriting lesson to Grade 1 learners?*
- *What strategies do you use if you note there is a problem with a Grade 1 learner's pre-handwriting skills?*

Phase 2:

The researcher conducted a thematic analysis of the collected data (transcripts) from the focus groups and proceeded to write up the results and made recommendations.

1.12 Data analysis and interpretation

As data could be varied, a thematic analysis approach was implemented in order to identify specific themes as to the underlying possible causes of different difficulties experienced by the learners in pre-handwriting tasks. The thematic analysis in this research project entailed the identification of themes in relation to the concept of handwriting and the categories of pre-handwriting challenges. The flexibility of the thematic analysis approach allowed the researcher to determine what qualified as a theme in the data analysis (Braun & Clarke, 2006:81). A thematic analysis approach called for the identification of recurring themes experienced by Grade 1 teachers in pre-handwriting tasks. By reflecting on these themes, common problems could be identified that Grade 1 teachers often experience (Braun & Clarke, 2016:741). The themes that recurred most often from the commonly experienced challenges were coded as significant. From the data it became clear why the themes were significant, because of the influence it had on the life-world of the learners as experienced by the Grade 1 teachers (Braun & Clarke, 2016:742). The inductive or “bottom-up” approach was applied as it was believed to explain the means and real experiences of the participants (Braun & Clarke, 2006:82-83). As transcripts were used in data collection in the focus groups, it was possible for the researcher to recall nuances and eventualities, and to report on it. Clarke and Braun (2006: 23) suggest six phases of data analysis, and these are as follows:

Phase 1: Familiarising yourself with your data (Braun & Clarke, 2006: 87)

Braun & Clarke (2006: 87) regard it as imperative that one immerses oneself in the data in order to become familiar with the depth and breadth of the content. The data that were collected from the focus groups by the use of audio recording underwent a process of transcription to ensure accuracy. The transcriptions were re-read in order for the researcher to become familiar with the data and the search for meanings and patterns for coding.

Phase 2: Generating initial codes (Braun & Clarke, 2006: 88)

After becoming familiar with the data, a general list of initial ideas was formed. After this, an initial list of codes was produced. Codes identify features in the data which appear to be interesting and reflect the most basic elements.

Phase 3: Searching for themes (Braun & Clarke, 2006: 89)

After all the data had been coded and collated, initial codes were sorted into potential themes. The different codes could be combined to form an overarching theme.

Phase 4: Reviewing the themes (Braun & Clarke, 2006: 91)

In this phase, a set of candidate or core themes was identified which cohered together in a meaningful manner. After this phase, the researcher had a good idea of what the different themes were and how they fitted together.

Phase 5: Defining and naming themes (Braun & Clarke, 2006: 92)

During this phase, the essence of the themes was known. Furthermore, for each individual theme, there was a written analysis which identified the story told by each theme (Braun & Clarke, 2006: 92).

Phase 6: Producing the report (Braun & Clarke, 2006: 93)

This phase reflected the full set of worked-out themes and includes the final writing up of the report.

1.13 Trustworthiness

Trustworthiness reflects a study that produces reliable knowledge that is ethically presented and leads to the question that one can ask, namely, whether the results are sufficiently authentic (Lincoln and Guba, 1985:218). Lincoln and Guba (1985:328) cite four aspects that reflect trustworthiness, namely *credibility*, *transferability*, *dependability* and *confirmability*. These are discussed in table 1 below.

Element	Measures taken in the study to ensure trustworthiness
Credibility	Credibility involves establishing whether the results are believable. It involves confidence in the "truth" of the findings (Lincoln and Guba, 1985). In this study the data gathered will be independently evaluated to ensure that the findings are authentic and plausible. Since the participants are the only ones who can legitimately judge the credibility of the results; the results will be randomly reviewed by them. This process is called member checking (Lincoln and Guba,1985:314).
Transferability	The researcher will thoroughly describe the entire study in order to facilitate any person wishing to duplicate the study or transfer the results to different contexts. The study will also provide a "thick description" of the issues that are of interest (Lincoln and Guba, 1985: 125), which entails a detailed account of the field experiences. This technique will establish if the findings are applicable and can be transferred to other contexts.
Dependability	To ensure that the study's findings are consistent and can be repeated a detailed description of all methods will be given to show consistency and that these findings can be repeated. The researcher will check the transcripts and also subject the findings to a inquiry audit (Lincoln and Guba 1985:366). The entire process will be documented by the researcher in order to be able to check and recheck the data.
Confirmability	As this aspect links data finding to data collection, it will be carefully monitored to see whether the resulting findings of the study reflect any bias, personal opinions or interest of the researcher. An outsider will also be requested to evaluate the findings (further inquiry/data audit),which will provide an opportunity for independent checks and challenges of the process and findings of the research study (Lincoln and Guba,1985: 323). Furthermore, the researcher will continually reflect (Lincoln and Guba, 1985: 73), to ensure awareness of the process that are stipulated in the research study and continually check for her own bias and judgements that could influence her neutrality.

Table 1. The elements of trustworthiness (Adapted from Lincoln and Guba, 1985:328 Naturalistic Inquiry).

1.14 Ethical considerations

Research ethics are governed by committees to ensure the protection of participants. The committees ensure that the planned research is scientifically and ethically sound (TREE, 2014:18). Ethical clearance was obtained from the Ethics Committee of the North-West University (Faculty of Education) to validate the ethical considerations of this study (**NWU-00202-18-S2**). Ethical considerations were undertaken in line with the structures as set out in the Training and Resources in Research Ethics Evaluation (TRREE) course, which the researcher completed on the 1st of May 2017, as well as specific requirements as stated by the North West University.

a) **Informed consent and voluntary participation**

Before commencement of the study, permission was obtained from relevant figures in authority. They were informed in writing of the duration of the study, as well as the possible effects and

consequences of the study (Creswell, 2014:96). Written permission was obtained from the following institutions:

- Department of Education (Limpopo)
- Participating three schools' principals
- Participating three schools' governing bodies
- Eight participating Grade 1 teachers
- Participating ten Grade 1 learners' parents

All participants were informed of the purpose of the study (whether focus groups or interviews), on how the information would be used, treated and the duration of the research period. They had the choice of opting out of the research at any time without any consequences and were fully aware that participation in the study was voluntary.

b) Protection from harm

Research ethics prescribe that research should benefit the participant (beneficence) and avoid unnecessary harm (non-maleficence) (TREE, 2014:9). In this study, the researcher is an experienced teacher, with professional colleagues on board. Great care was taken in avoiding any possible harm to the participants.

c) Privacy, confidentiality and anonymity

The privacy of participants was respected by replacing names with aliases in order to protect their identities. All grade 1 learners were only observed and no identifying details were required (Creswell, 2014:99). The researcher undertook to not disclose any harmful or embarrassing information of any participant, and participants' views would remain anonymous as far as possible within the focus groups.

d) Analysis and reporting

Creswell (2014:99) gives clear guidelines on analysing data and reporting the findings of the study. These guidelines were followed and applied to the study in the following ways:

- Care was taken to remain objective and not to report findings that only show participants in a favourable light.
- All results were reported, whether positive, negative or a nil result.
- The researcher did not suppress, falsify or invent findings. Any methods of scientific misconduct would not be conducive to the compilation of a sound and effective pre-writing programme, meant to benefit grade 1 learners.
- Raw data will be kept safe for a period of 5 (five) years, before being discarded.

- All participants had free access to the results of this research during the project and will continue to have access also after the conclusion of the project in order to promote transparency.

1.15 Limitations of the study

This study took place in three primary schools in the Limpopo Province, in an urban setting, in the advantaged community of Polokwane. Should this study be repeated in disadvantaged communities and/or in rural areas, the data might differ significantly because of possible limited exposure to perceptual development in pre-schools. The schools where the study was conducted are well resourced. This will be taken into account when the pre-writing programme is compiled in order to ensure that, should equipment be needed, it must be affordable and readily available. Only a limited measure of generalization could be applied in pre-writing programmes, in order to provide for the specificity of the geographic (Limpopo), urban and socio-economic (advantaged) context of the sample group, as the study was only conducted at urban primary schools in the Limpopo Province.

1.16 Contribution of the study

This study will empower Grade 1 teachers by enlightening them to the challenges which Grade 1 learners experience when performing pre-handwriting tasks.

1.17 Conclusion

In this chapter, I have outlined the purpose of this study, which was to highlight the lack of direction given to teachers in the CAPS document regarding a pre-handwriting programme. The research question was explored and answered during the focus group discussions. In the next chapter, I present a literature review that will further illuminate the elements of handwriting.

1.18 Overview of the Study

- ❖ Chapter 1: Introduction
- ❖ Chapter 2: Literature review
- ❖ Chapter 3: Research methodology
- ❖ Chapter 4: Findings of the study
- ❖ Chapter 5: Discussion of the findings

CHAPTER 2: LITERATURE REVIEW

“Handwriting is an imprint of the self on the page.” Dr R Sassoon (nd)

“Handwriting is rooted in the spirit, even though it appears by means of bodily senses.” Al Nazzam (c.830)

2.1 Introduction

As the concepts used in this study are explained, it will become clear to the reader that the acquisition of handwriting is indeed a complex process, as described by Dinehart (2015:99), Medwell & Wray (2014:35), Sita & Taylor (2015:1), Stievano, Michetti, McClintock, Levis, & Scalisi (2016:1497) and Tse, Thanapalan, & Chan (2014: 345). Medwell & Wray (2014: 35) expound that this complex process entails motor abilities to be exercised unintentionally, while Dinehart (2015:99) emphasises that opportunities for such unintentional exercises should be provided from a much younger age than the formal school-going age. The child’s desire to write is evident from a very young age, even before the child is able to use a writing utensil correctly. Infants and toddlers’ scribbles are the early beginnings of writing. Loubser & Hoogbaard (2014:37) conclude that handwriting is a skill that needs to be taught, and is preceded by writing-readiness and pre-handwriting skills.

2.2. Concept Clarifications and definitions

2.2.1 Grade 1

Chiwiri and Musiyiwa (2017:91) aptly describe Grade 1 as a transition from early childhood development to primary school. It is a phase that offers new learning experiences and opportunities to master new skills. Feder and Majnemer (2007: 313) have found that handwriting developed mostly during grade 1 (age 6–7 years), is reinforced in grade two (age 7–8 years) and becomes automatic by grade three (age 8–9 years).

2.2.2 Experience

Experience is described in the Oxford Online Dictionary in three independent but associated statements. It is communicated firstly as “practical contact with, and observation of, facts or events”, secondly as “the knowledge or skill acquired by a period of practical experience of something; especially that gained in a particular profession”, and thirdly as “an event or occurrence which leaves an impression on someone”. From these descriptions, one can logically

deduce that experience consists of three interlinked concepts, namely, practical contact, knowledge and skill that is acquired and finally a lingering impression. However, Amoah, Radder & Van Eyk (2017:294) proclaim that no encompassing definition has been set on the concept of experience, but they opine that the use of knowledge and skill can create a positive experience and assist in obtaining a goal. In this research project, this goal attainment would be translated as learners experiencing the acquisition of pre-handwriting skills as a positive experience and reaching the goal of becoming successful in handwriting.

Md-Ali, Karim, & Ysof (2016:45) emphasize that an enormous responsibility rests upon the teachers to ensure that the young learners in their care are equipped with the skills they need to master. Md-Ali *et al.* (2016:53) found it noteworthy to mention the quality and competency levels of teachers with regard to teaching the young learner.

Csikszentmihalyi (1990: 3) implies that teachers' experiences add up to a mastery of their field of education due to their participation in many areas of life. Optimal experience enables teachers to control what happens, consciously, each moment of the day in their classrooms. He adds to this by saying that experience comes with effort and creativity because individuals put energy and attention into acquiring skills, which, in turn, lead to action (Csikszentmihalyi, 1990:3).

Md-Ali *et al.* (2016:46) recognize that teachers need a strong component of pedagogical content knowledge, but theorise that it is the good teacher who also understands the learners and how to deal with them. Their study was conducted among teachers with years of experience ranging between 16 and 25 years. The years of teaching plus the qualities of a "good" teacher could culminate into an experienced teacher. Experience gained over a number of years is difficult, if not impossible, to transfer to newly qualified teachers. It is, then, unfortunate that newly qualified teachers feel insignificant and even excluded, as was the case in the research project undertaken by Botha and Bornman (2015: 7).

Newly qualified teachers expect to follow procedures, guidelines and rules, whereas experienced teachers are autonomous in their decision-making. Also, experienced teachers are more flexible with regard to learners' responses and interruptions during teaching periods, as opposed to novice teachers that must still learn to anticipate curve-ball responses and interruptions (Mehrpour & Moghaddam, 2018: 20).

2.2.3 Learners

David Scott (2017:55) describes learning as "a process of pedagogic relations", implying that there are learners interacting with learning material. An individual who acquires new knowledge by interacting with different resources, be it humans, materials or objects, can consequently be considered as participating in the pedagogic process and be seen as a learner. Therefore, the

acquisition of new knowledge usually comes from an external source which the learner interacts with, which influences or changes the learner because of the knowledge she has acquired.

2.2.4 Pre-handwriting skills

In order for the young child to become ready to master formal handwriting, certain pre-handwriting skills need to be mastered initially. These skills include a correct pencil grip; drawing, writing, copying and colouring. Pre-writing shapes are the formational strokes of most letters and numbers and form a fundamental part of the young child’s pre-handwriting skills (Tabatabaey-Mashadi, Sudirman, Khalid & Lange-Küttner, 2015: 890). These strokes are usually mastered in the specific order indicated in figure 1 and are age specific.

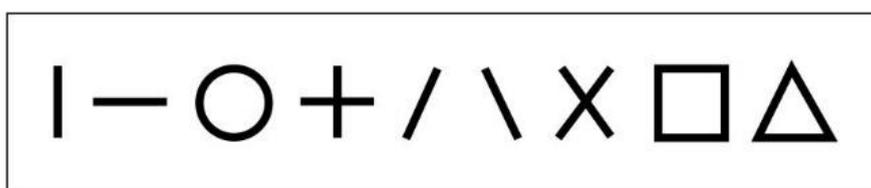


Figure 1. Pre-handwriting strokes adapted from Kid Sense, 2018.

From these basic strokes, handwriting is formed (See figure 2).

Long and short sticks	
Humps and bumbs	un
Doughnuts	o
Horizontal and diagonal lines	\ / -
Tails	j

Figure 2. Pre-handwriting strokes which form the basis or formal handwriting (Versfeld, n.d.)

Dinehart (2015:99) expounds on the development of handwriting by mentioning that children will typically start experimenting with writing from as young as the age of two years. Even though their scribbles do not resemble conventional writing, there will be recognizable features such as directionality and elongation.

Eventually, the child will start copying geometric shapes as an introduction to writing, with the lines and shapes, as in Figure 1. Feder and Majnemer (2007: 313) explain that a child will begin making vertical strokes at the age of 2 years, about 6 months before he moves on to horizontal strokes. By age 3, the child is able to draw circles, after which the child will imitate and eventually

copy a cross at the age of 4 years. By the age of 5 years, the child is able to copy a square, and six months later, a triangle.

Dinehart (2015: 99) confirms the findings of Feder and Mainemer (2007: 313), that the child shows a readiness for learning to write when mastering the oblique cross, because the child has to cross the body midline in order to copy the oblique cross. An inability to cross the body midline implies that the child may experience reversal problems in writing, e.g. 6/9, n/u, f/t. Furthermore, Dinehart (2015: 99) contributes the more adequate manipulation of objects in their hands to developing fine motor skills and declares that fine motor skills are essential in the process of handwriting development.

Dinehart (2015: 111) reports that 93% of elementary school teachers that took part in a national survey in the USA present handwriting lessons as whole-class lessons and most of these teachers are of the opinion that handwriting should be taught formally, not incidentally. Unfortunately, in South Africa this does not occur: teachers still do not spend enough time on teaching handwriting, and they do not use effective strategies in teaching handwriting (DoBE 2017: 56). A disappointing fact is that most teachers claim not to have received instruction in teaching handwriting at the tertiary level (DoBE 2017: 97).

2.2.5 Teacher

The Oxford Dictionary Online defines a teacher as someone who “instructs others how to do something”. The concept of teacher, in this research, reflects the individual teacher as the person instructing young learners in handwriting. To become a teacher in a classroom, academic knowledge, as well as practical experience, is required. The teacher as the adult in the classroom is a decision maker, a reflective practitioner, as well as a relations expert (Venter, 2017: 65).

Within the South African context, the Department of Basic Education (DoBE, 2011) acknowledges that South Africa is experiencing a shortage of teachers that are qualified and competent enough to teach in the early childhood development phase (DBE 2011: 11b). This shortage creates a situation whereby children are not fully supported or adequately introduced into the school system. To further delineate the role of teachers, Elliot, Kratochwill, Cook & Travers (2000: 12) relate the tasks of teachers as helping children learn as much as they can and, in addition, advise teachers to teach for understanding. Furthermore, they also acknowledge that dedicated teachers study beyond the demands of duty and they take pleasure in working with young children (Elliot *et al.*, 2000: 13), all exceptional characteristics of a dedicated and passionate teacher.

2.2.6 The Grade 1 teacher

The Grade 1 teacher is the first formal educator in the life of the young child and is viewed as the anchor of the child's academic career (Kearns & Hart, 2017: 512). This teacher constructs the base, or the foundation, on which the child's lifelong learning will be based. The Grade 1 teacher has to be very patient, as most children only begin to learn to write at the beginning of the year. Grade 1 teachers plan lessons that are short and simple (<http://tobecomeateacher.org/how-to-become-a-first-grade-teacher/>), due to the short attention span of the young child.

Grade 1 teachers make use of art, games and rhymes to optimize learning in their classrooms. These learners are typically six and seven years old. The teachers of these young learners give feedback on the learners' learning and behaviour to parents more often than in the other grades (https://study.com/first_grade_teacher.html), even if it is in an informal way, such as a note in a message book, or verbally.

In South Africa, it is the teacher in the Grade 1 classroom who is responsible for teaching handwriting. Feder and Majnemer (2007: 315) acknowledge that no prescribed methods of teaching handwriting exist in schools around the world, which includes South Africa. It is for this reason that this research project was carried out: because there is a lack of guidance on handwriting within the CAPS document. This implies that the learners are at the mercy of a teacher's professional development (Svendson, 2017: 116), which can be considered a significant extrinsic factor influencing handwriting. Furthermore, this factor, especially in view of the fact that handwriting is seen as a predictor for future academic success as endorsed by Cameron, Murrah, Grissmer, Brock, Bell, Worzall, & Morrison (2012: 1230), Dineheart (2015: 98), as well as Grissmer, Grimm, Aiyer, Murrah & Steele (2010: 1015), is quite concerning. Therefore, to remediate this situation, Grade 1 teachers need to embark on a search for the best-suited handwriting programme available and adapt it for their classroom and enlist for voluntary professional development courses on handwriting, in order to deliver a standard in education worthy of their young learners.

2.2.7 Fine motor skills

Fine motor skills involve the smaller muscles of the body and in terms of handwriting it will mean that the hands and fingers with the corresponding muscles will be involved. Other actions related to fine motor skills where these muscles are employed are, for example, tying of shoelaces, cutting with scissors and buttoning up clothing, as described by Dinehart (2015: 106) and also Van Hartingsveldt, Cup, Hendriks, De Vries, De Groot & Nijhuis-van der Sanden (2015: 63). It therefore follows that strengthening the fine motor muscles is important as they are ultimately

used in precision activities such as in handwriting. Nel, Nel & Hugo (2013: 159), suggest activities that strengthen the smaller muscles in the hands and fingers include activities that involve various finger movements, for example, learners pretending to play piano on their desk. More activities that will strengthen fine motor muscles in the hands include threading, lacing, playdough, opening and closing jars, drawing, colouring in, finger games, pegboard, art and craft activities and construction games such as Duplo, Lego, and Mobilo (<https://childdevelopment.com.au/areas-of-concern/writing/writing-readiness-pre-writing-skills/>).

Arnold & Yeomans (2005: 45) highlight the fact that fine motor skills include actions and the corresponding muscles that perform small movements such as drawing and threading and enable the child to execute tasks that require detailed actions. Banumathe *et al.* (2016: 20) agree with this and explain further that poor fine motor skills often lead to illegible handwriting and an insufficient pencil grip. Kim, Carlson, Curby, & Winsler (2016: 44) elaborate that fine motor skills involve the smaller muscles in the hands and fingers and are put to use for using utensils at meal times, finger painting, cutting with scissors and writing - all activities that would not be possible if these muscles were not developed or co-ordinated.

Finally, fine motor skills at pre-school level can be indicative of school achievement at a later stage, as fine motor skills is related to other cognitive and social skills, according to Cameron *et al.* (2012: 1229), over and above just the handwriting aspects. Roebbers, Rothlisberger, Neuenschwander, Cimeli, Michel & Jager (2013: 294) have found that “fine motor skills may be seen as an indicator of neural connectivity and of how well a child masters the executive demands inherent in many everyday life situations”.

Rosenblum (2018: 2) and Prunty, Barnett, Wilmut, & Plumb (2016: 54) argue that writing tasks amount to 30% to 60% of an average school day and therefore deficits in handwriting and have a negative effect on the learner’s confidence and self-image, which could manifest in poor academic achievements. Thus, the concern is for all learners who experience problems with fine motor skills, because even if these problems are mild problems, the learner will be not on the same level of proficiency as their peers. In fact, Gaul & Issartel (2015: 79) advise that these difficulties may never be overcome, and may ultimately affect their quality of life adversely.

Gaul and Issartel (2015: 82) warn that modern technology has replaced traditional leisure time activities, such as construction games and board games, which could have an adverse effect on learners’ fine motor skills development.

2.2.8 Postural stability

In lieu of a clear-cut definition for postural stability, one can only deduct from Sinitski, Thompson, Godsell, Honey & Besemann (2018: 2) study that postural stability depends on upper body sway and centre of pressure. The more the sway and the velocity of sway, the higher the indication of postural instability. Head, hand and posture are functionally related. In a study where Flatters (Flatters *et al.*, 2014: 2915) and his colleagues measured head movement and centre of pressure during tracking, aiming and tracing activities, results showed that the development of postural stability and the development of manual control are implemented simultaneously, depending on the task required. In general, postural stability requires the pelvic and shoulder girdles to maintain an erect position in order to free the arms. Banumanthe *et al.* (2016: 20) counsel that a child experiencing difficulties in postural stability will grow tired easily and slump on the desk, leaning the head on the arms or on the desk while writing. Feder and Majnemer (2007: 315) describe the ideal posture for handwriting as a seated position, with the feet flat on the floor, the hips and lower back against the chair back for support, and the knees bent at 90 degrees. The elbows should be curved and the forearms should rest on the desk. Without postural stability this ideal position would not be attained, resulting in bad handwriting.

From this one can deduce that handwriting is greatly influenced by the position of the trunk and legs (Sasada, 2016: 40), as well as the general postural stability.

2.2.9 Pencil grip

No formal definition could be found for pencil grasp, but the Oxford Online Dictionary defines “grasp” as “to seize and hold firmly”. For the purpose of this research, it would mean that the pencil, or writing utensil, should be held firmly, just enough to still be able to exert sufficient control in order to make successful markings on the writing surface.

The natural progression of a pencil grasp reveals various hand and finger positions as a child develops (See figure 3). As the young child starts experimenting with writing utensils, the pencil grip is flexible, until eventually, the pencil grip matures into the tripod grip. The initial grip which a young child of 12 to 18 months performs is seen as a cylindrical grasp whereby the pencil is clutched in the entire hand as the child wraps the crayon in his hand. This is called the cylindrical grip.

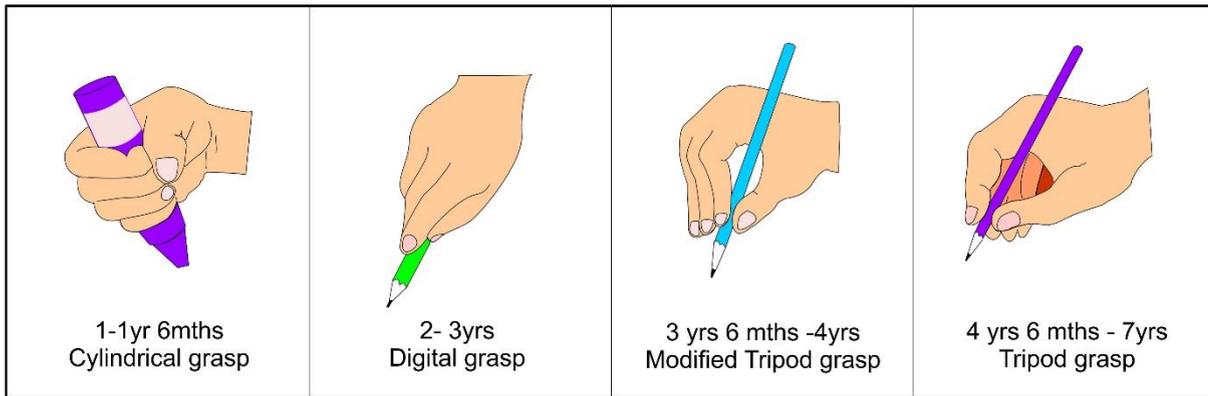


Figure 3: Natural progression of acquiring the tripod pencil grip (Zara, 2017).

As the child develops and more dexterity is obtained with their fingers, a digital grasp is performed. The toddler then moves on to a modified tripod grasp by age 3½ to 4 years, which is used more often. The full tripod grip is usually accomplished from the age of 4½ to 7 years old, with the pre-schooler having mastered the tripod grip by the time they enter school.

The most acceptable pencil grip is the tripod grip (Schwellnus, *et al.*, 2012: 719). In the tripod grip, the pencil is held with three fingers: the thumb, the middle finger and the index finger, because it allows the fingers to bend and straighten while writing (Kandil, Elkhair, & Ameen, 2016: 10). The thumb pad applies pressure to the pencil, the index finger guides the pencil and the middle finger supports the pencil. The pencil should be held 2,5cm from the tip for optimal control (Sisada, 2016: 38). (See figure 4 for the right-handed tripod grasp and figure 5 for the left-handed tripod grasp).

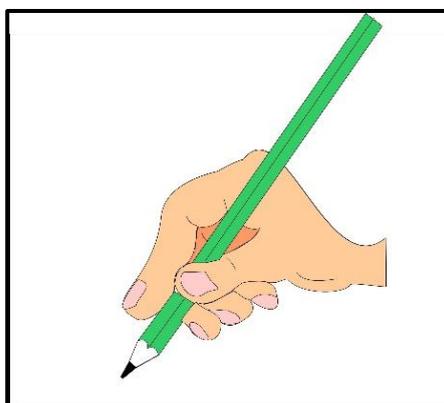


Figure 4: Right handed tripod grasp (Sisada, 2016)

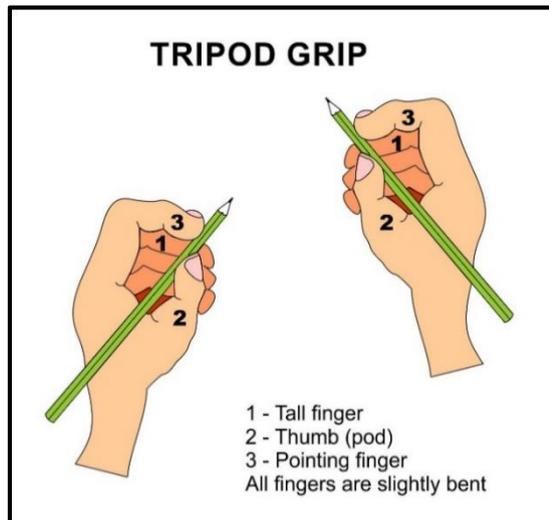


Figure 5: The tripod grip for left- and right-handed learners (Ross, 2012)

A tripod pencil grip is a complex skill for a young learner to master, yet the learner must maintain a controlled, yet comfortable grip to attain a relaxed and comfortable handwriting skill.

Problems may be experienced by learners regarding handwriting skill. Often these originate from their pencil grips, for example, a pinch grip is five times more stressful than a power grip because the writer tires easily with the excessive pressure exerted on the writing utensil (Kandil *et al.*, 2016: 1). (See figure 6).

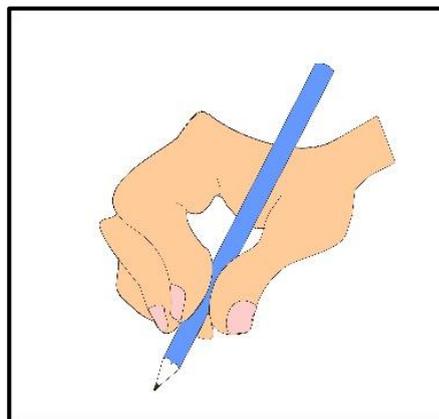


Figure 6: The pinched pencil grip (Schneck & Henderson, 1990)

The power grip (see figure 7), which is quite common, is inefficient and can create handwriting problems as the child progresses through the grades (Schwellnus, *et al.*, 2012: 718). The power grip is also called lateral (thumb) tripod grasp and it is inefficient because the thumb is hampered in its movement and unable to contribute to the writing action. The writing action is produced by the index finger and middle finger (Schwellnus *et al.*, 2012: 719)

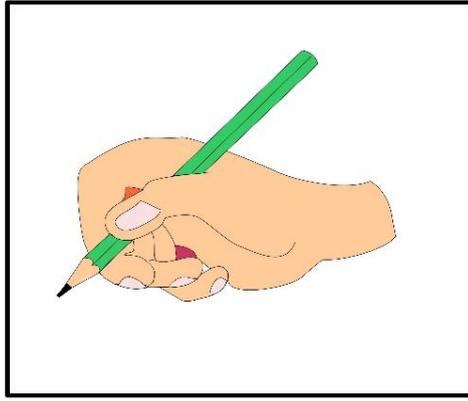


Figure 7: The power grip (Schneck & Henderson, 1990)

Furthermore, the learner with low muscle tone might use the “thumb wrap grip”, explained by Kandil *et al.* (2016:2) as gripping the shaft of the pencil between the thumb and the side of the forefinger, in order to gain more flexibility in the joints of their fingers (See figure 8).

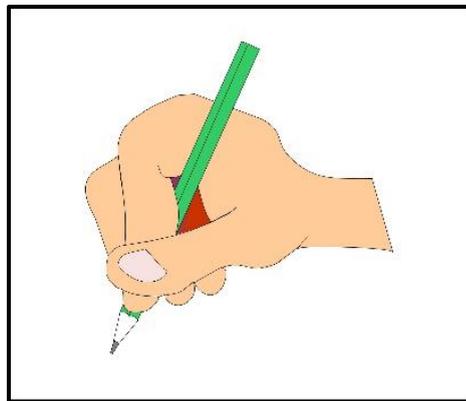


Figure 8: The thumb wrap grip (Schneck & Henderson, 1990)

2.2.10 Kinaesthesia

Kinaesthesia registers the movement of the writing utensil, the pressure applied to the pencil, and the direction in which the pencil is moving (Stevenson & Just, 2014: 50).

In order to be successful in handwriting, the young learner needs to experience the senses of touch, kinaesthesia (also called motor memory) and vision. The tactile sense gives feedback about the pencil grip and the position of the writing surface, namely the paper. In the beginning, the young writer relies on visual control to guide the writing utensil, but as the child becomes more proficient in handwriting, kinaesthesia takes over from visual control because letter formation becomes automated (Stevenson & Just, 2014: 50).

Motor development is necessary for the acquisition of developmental functions, which include cognitive development and social development. Delays in early motor development may cause poor academic skills, social development and attention ability (Kim *et al.*, 2016:43).

2.2.11 Visual-motor integration

“Visual motor integration (VMI) can be defined as the extent to which visual perception and finger-hand movements are well coordinated” (Fang, Wang, Zhang & Qin, 2017:1).

Visual-motor integration tasks usually require a learner to copy an image or text (Becker, Miao, Duncan & McClelland, 2014:413). In doing so, spatial orientation, visualization of the image, and visual short-term memory are all perceptual elements necessary to produce the copy of the image in correct proportions, onto paper (Becker *et al.*, 2014:413; Cameron *et al.*, 2012: 1230).

Fang *et al.*, (2017:1) confirm Feder and Majnemer’s (2007:314) findings that visual-motor integration is an important element in handwriting. Visual-motor integration is employed when learners copy from text or from the board to their books. For visual-motor integration to be successful, visual perception and finger-hand movements have to be well coordinated (Du Plessis, Coetzee & Pienaar, 2015:69). Furthermore, visual-motor skills have been found to be related to mathematics and literacy and therefore can be seen as a predictor of academic success, even if it is only because of the higher cognitive function that are required (Aiyer, Murrah, Grimm, Grissmer, & Steele, 2010:1015).

2.2.12 Spatial orientation

Spatial orientation is the human’s natural ability to orientate yourself according to the space around you (Wentzel, 1989: 7). Wentzel explains further that the young learner is expected to be able to plan schoolwork according to the space available on the page. Therefore, the young learner should master concepts such as “in front of”, “behind”, “inside”, “outside” and other spatial-related concepts before the onset of formal schooling (Wentzel, 1989: 7).

The significance of spatial orientation in handwriting is commendably illustrated in a research project undertaken by Kawa, Bednorz, Stępień, Derejczyk & Bugdola, (2017: 24) where a control group and a group with mild cognitive impairment (MCI) were assigned the same writing tasks. Apart from the aspect of spatial orientation, the MCI group provided valuable information with regard to cognitive and motor skills which showed that cognitive skills, motor skills and spatial orientation are interrelated in terms of handwriting by way of the nervous system. In this research project the MCI group, compared to the control group, wrote slower, hesitated longer before starting to write, lifted their hands more often and the letters depicted on the page were larger and more strokes were used to form the letters (Kawa *et al.*, 2017: 24). These differences can

clearly be seen in figure 9, where the letter formation is bigger with more uncontrolled strokes, reflecting spatial orientation problems.

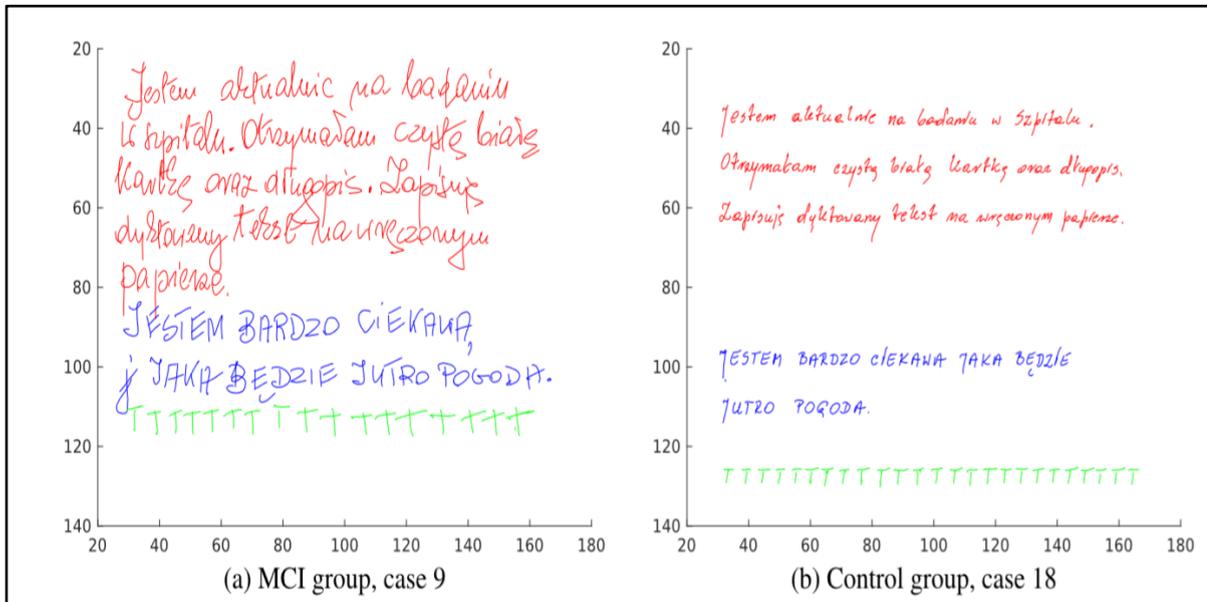


Figure 9: The differences between the Mild Cognitive Impairment group and the Control group in the Kawa *et al.*, (2017:26) study.

In conclusion, the teacher aims to train successful writers, from grade 1, where these learners are able to write fluently and at an acceptable speed, yet still endeavour to produce a neat, legible handwriting (Feder, Racine & Mainemer, 2008: 75; Tse *et al.*, 2013: 341).

2.2.13 Midline crossing

Midline crossing involves the child being able to cross an internal, imaginary line that runs down the centre of the body, dividing the body into a left and right side. Any normally developing learner should be able to cross this midline with the arms and legs, e.g. crawling, jumping crisscross or simply reaching over to the opposite side of the body (Strickland, 2018: 1). Krog (2015: 2) points out that learners experiencing problems with midline crossing and laterality become despondent in school if unassisted because these skills are important in the acquisition of handwriting and other academic accomplishments, such as mathematics, spelling and science (McMaster & Roberts, 2016: 32). Midline crossing is a necessary perceptual skill for handwriting, specifically for the writing of letters and numbers such as 2, 3, 5, 8, b, k, z, as well as an even writing size across a line. It is, however, not uncommon for young learners to reverse letters in the beginning stages of learning to write (Fischer & Koch, 2016: 36), e.g. 3 and E.

2.2.14 Laterality

Laterality is known as two sides of the body; it is the motor awareness that the individual has a left and a right side (Landsberg in Landsberg, 2016: 425). This concept is related to the midline and the crossing thereof. De Witt (2016: 100) explains that the young learner’s awareness of the two sides of the body is vital to future learning, such as reading, writing and mathematics. Landsberg in Landsberg (2016:418) points out that laterality is an acquired skill, which means it can be taught through tactile and auditory strategies. Landsberg in Landsberg (2016: 418) advises that laterality be instilled decisively via tactile, as well as auditory clues, as these are learned skills, e.g. unilateral hops, bilateral hops and alternative hops, as those can be the beginning of the young learner’s understanding of the left and right sides of the body.

2.2.15 Directionality

Dictionary.com (19 June 2018) explains directionality as relating to a direction in space; that is, spatial concepts of up, down, inside, outside, left and right. It is noteworthy that young children do not understand directionality within one lesson. Rather, it develops over a period of time. Five-to-seven-year olds often have to be reminded of left/right when they confuse the two (Strickland 2018: 1). According to Wentzel (1989: 7) directionality is the ability to recognize and distinguish between left and right. Dr Jan Strydom, developer of the Audiblox © programme (Strydom & Du Plessis, 2000: 212), advocated the use of an “arrows chart” as an effective learning and teaching tool for the concept of directionality. The learners indicate the direction of the arrows while identifying the direction verbally, and marching at the same time, which makes the “reading” of the arrows a rhythmic activity. The directions are read as “up”, “down”, “left” and “right”. There is no prescribed arrows chart (Strydom & Du Plessis, 2000: 213).

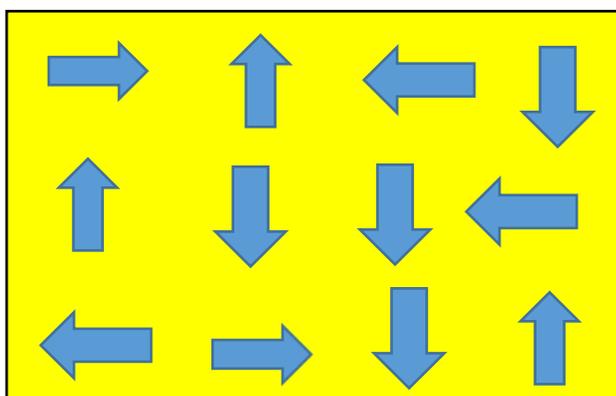


Figure 10: An example of an arrows chart (compiled by R. Annandale, researcher in this project and licensed Audiblox© tutor)

2.3 Conclusion

In this literature review, the concepts associated with the acquisition of handwriting were discussed, confirming the complexity of this skill. The physical and cognitive components

involved are not all achieved at once, yet, once all are achieved, the components blend into a skill that has far-reaching consequences, such as a positive self-image and scholastic achievement in mathematics and science. In the next chapter, the research methodology used in this research project is described.

CHAPTER 3: RESEARCH METHODOLOGY

“Research is to see what everybody else has seen, and to think what nobody else has thought.” Albert Szent-Gyorgyi (1957)

3.1 Introduction

As stated by Grey (2014: 3), research is a systematic and organised effort to investigate or inquire (Merriam & Tisdell, 2016: 3) into a specific problem, which needs a solution. Therefore, the aim of a researcher is to make meaning of the world around her and provide possible solutions to specific problems. Furthermore, research can also be used to clarify, build or verify theory; doing research in the real world brings with it many challenges (Grey, 2014: 3). Therefore, research is a way of thinking, which by solving challenges and problems, posing questions, making observations, it explores and endeavours to understand and explain observations as well as draw conclusions. This process enhances everyday skills and practices; it also grows, and helps develop a knowledge base (Grey, 2014: 4; Merriam & Tisdell, 2016: 3).

The research question posed in this study was:

“What pre-handwriting challenges do Grade 1 teachers experience with their learners?”

In aiming to answer this question, a systematic organised investigation was used to observe concepts and to explore and understand the meaning in context (Merriam & Tisdell, 2016: 2) of the phenomena.

3.2 Looking through a constructivist lens

This research project was undertaken from the perspective of constructivism. When looking through this lens, one accepts that knowledge is created by the individual and his interactions with the world; thus knowledge is constructed and not discovered (Grey, 2014: 20). In this study, young learners attempted to make sense of their world as they engaged in handwriting (Cresswell, 2014: 8). Therefore, these subjects constructed their own meaning in different ways, even in relation to the same phenomena (Grey, 2014: 20). In the same manner, teachers attempted to make sense of the problems experienced by the young learners and engaged in the process of assisting the learners in their classrooms. Flick (2014: 76) reminds us that any form of cognition involves neurobiological processes, which are linked directly to images of the learner’s world and the learner’s reality. Thus, multiple contradictory, but equally valid, accounts of the world exist (Grey, 2014: 20). The learner and the teacher, thus, endeavoured to

understand their experiences in the context of challenges experienced relating to handwriting skills.

3.3 Phenomenology

Phenomenology is a research design that supports direct experience, exploring the life-world of humans in everyday situations (Nieuwenhuis in Maree, 2016: 77). It recognises that the experience of a phenomenon, as perceived by the individual, determines behaviour (Cohen, Manion & Morrison, 2011:18). The way people describe things and experience them through their senses, is incorporated in the aims of the phenomenological perspective, which provides a deeper insight and understanding into our everyday experiences, discovering the essence (nature) of experiences (Patton, 2015: 115-121).

For the purpose of this research study, phenomenology was selected as a research design because it facilitates inductive qualitative methods such as interviews, dialogue and conversational analysis, and the observation of research participants, inspiring learner-centred teaching (Okeke & Van Wyk, 2017: 46). Apart from the observation reports, interviews and conversations, data collection for this study also involved focus group discussions (Okeke & Van Wyk, 2017: 45).

The phenomenological research design lent itself to provide thick descriptions of the everyday experiences, narrated by the Grade 1 teachers of the three participating urban public primary schools. These communicated experiences (Maree in Maree, 2016: 36) involved the Grade 1 teachers' encounters and events that occurred with learners that had experienced specific difficulties with pre-handwriting skills.

Criticism and justification of this approach

A criticism of the phenomenological approach is twofold. Lavery (2003: 23) states that one needs to bracket out the outer world, individual biases and suspend judgement in order to see the phenomena clearly. Thus, language can be contradictory and ambiguous as well as interpreted literally or implicitly and participants may experience difficulties in relating their experiences. Secondly, the aspect of understanding (one participant's understanding of what another participant is explaining), which is believed to be influenced by one's background, culture, social and historical contexts (Lavery, 2003: 24). In order to ameliorate this situation and reduce the effect of these aspects member checking was done, with the transcription being signed off by all the participants.

As the purpose of this study was to explore the experiences of teachers who taught Grade 1 learners who experienced handwriting problems, the phenomenological approach was suited to obtain the participants' subjective experiences, promoting the understanding of the experiences and not just describing the phenomena.

3.4 Qualitative research design

A research design is an overarching plan for the collection, analysis and reporting of data (Grey, 2014: 128). For this study, a qualitative design was chosen as it reflected an ideal manner for data to be gained in a deep, intense and holistic manner within the context of the study (Grey, 2014: 160). Patton believes that qualitative research is an enquiry into how people ascribe meaning to the world around them (Patton, 2015: 5), involving interaction within the everyday lives of the individuals (Grey, 2014: 160).

To obtain personal meanings, interviews, observations and documents were used as a data collection method (Patton, 2015: 5). The data were then studied and interpreted, allowing the researcher to gain insight into and draw unique personal conclusions regarding the data. This qualitative approach was ideal for this study, as it afforded the possibilities of broad explanations regarding the learners' behaviours, difficulties and attitudes regarding their challenges with pre-handwriting skills. Furthermore, it facilitated the views, interventions and approaches that assisted in identifying the young learners who were experiencing difficulties with pre-handwriting skills (Creswell, 2014: 64).

3.5 Sample selection

A sample is a unit or a section of the main population (Merriam & Tisdell, 2016: 95). The researcher needs to choose a site, where, what, when and whom to observe and interview (Merriam & Tisdell, 2016: 96).

There are two types of sampling, probability and nonprobability (Merriam & Tisdell, 2016: 96). This study followed a nonprobability or purposeful (purposive) sampling method. The purposive method is based on the assumption that the researcher wants to discover, understand and gain insight into the experiences (Merriam & Tisdell, 2016: 96), therefore samples are chosen specifically to obtain information that is able to adequately answer the research question. This sampling method was used, as the research question required specific answers that could only be answered by obtaining specific focussed information. With purposive sampling, selection criteria must be determined initially (Merriam & Tisdell, 2016: 97). Simply put, it is essential to

choose participants or sites which will be most beneficial in providing the most suitable information that will answer the research question. Therefore, the participants that are selected must fulfil specific criteria. The type of sampling that was selected for this study is convenience sampling, in which the convenience of time, money, location and availability of respondents (Merriam & Tisdell, 2016: 98) are taken into consideration. Regarding this study, no extra time was required, as the Grade 1 teachers went about their teaching as usual, and the participants received no monetary compensation for participating in this research project. Apart from the focus group discussions, everything was accommodated in the daily routines of the teaching staff. My appreciation for their willingness to participate in this research project was shown by providing refreshments at the restaurant where the focus group discussion was held. I, as the researcher, have not received financial support for this research project.

3.5.1 Selection of the research site

Merriam and Tisdell (2016: 97) suggest that in selecting a site, it must be “typical”, meaning usual, regular or predictable. The research sites for this project were the usual classrooms of the Grade 1 teachers and their learners. The learners engaged in the tasks as usual, and the same tasks as their peers. The Grade 1 teachers offered assistance, as they usually would, on the site, that is, in the same classroom. The aim was to study the specific phenomenon in the circumstances surrounding the Grade 1 learners’ typical, regular and predictable environment, which aided in enhancing the authenticity of the findings.

3.5.2 Selection of the participants

All the Grade 1 learners at the three participating primary schools had an equal opportunity to be participants in this research project. What qualified some learners over others, was that the learners who were evidently struggling with pre-handwriting skills and their parents’ willingness to give written consent for the evidence to be included in this study, were easier to select as participants. This is in line with Merriam & Tisdell’s (2016: 98) *availability of respondents* aspect of convenience sampling (see 3.5 above).

3.6 Data collection

Data collection, as is usual in phenomenology, included interviews (transcribed), conversations (between the participants and non-participants), participant observation (participant to participant), focus group discussions (researcher and participants), analysis of physical evidence (by researcher), field notes (by researcher and participants), and also audio and visual materials (by researcher) (Cohen *et al.*, 2011:537; Okeke & Van Wyk, 2017: 175). Flick (2014: 250) explains that focus group discussions are often used in combination with other methods, and in this research project, it was combined with observation. Flick also explains that the

specific use of a focus group discussion is to generate data through the interaction of the participants (2014: 250). Patton (2015: 387) advises the researcher to date field notes and to be descriptive regarding the setting and social interactions, as well as the observer's own expressed thoughts and reactions, as it contributes to the data.

The course of events that completed the process of this research project started with permission being obtained from the Department of Basic Education, in the person of Dr M.C. Makola, the chairpersons of the School Governing Bodies of School E, School PL and School V, the principals of said three schools, two Grade 1 teachers from School V, three Grade 1 teachers from School E and three Grade 1 teachers from School PL. The teachers at the three schools identified the learners, and obtained written consent from the parents. From School V, I had three learner participants, with four learner participants from School E and three learner participants from School PL. More learners were identified as experiencing difficulties with pre-handwriting skills, but the teachers were unable to obtain written consent from their parents due to parents not being available. Examples of these learners' difficulties were voiced in the focus group discussions without identifying them, and none of their written work was submitted as evidence.

The first group discussion took place in the conference room of a local restaurant. It was unfortunate that the teachers from School E had to withdraw from that particular discussion at the last minute due to an urgent meeting at their school, but their focus group discussion was held a week later in one of the school's classrooms.

The focus group discussions were informal and cordial. The Grade 1 teachers did not need prompting; they shared information readily. After transcribing the focus group discussions, I had the transcriptions signed off as a true reflection of the dialogue that had taken place.

The data were analysed, sorted into themes and interpreted to come to a meaningful conclusion. As Braun and Clarke (2006: 81) point out, data are analysed to find patterns or themes that emerge throughout the data set. The thematic analysis method of finding patterns and themes was well suited to this project from my constructivist perspective (Braun & Clark, 2006: 81), as it enabled me to study the experiences of the Grade 1 teachers and their learners, and the events that are part of their realities concerning difficulties with pre-handwriting skills.

3.6.1 Focus group

Focus group discussions may yield more data than individual interviews due to the interaction among the participants (Flick, 2015: 147). Nieuwenhuis in Maree (2016: 95) holds a similar view, but cautions that participants may be inhibited by focus groups. However, the teachers assured

me that they would not mind speaking up in a group setting. I opted for a homogenous group (Flick, 2015: 147) as the teachers had similar professional training. This group was also what Flick (2015: 147) describes as a natural group, because the teachers had all dealt with very similar problems on a daily basis. Most of the problems that these teachers experienced spoke to the research question. The teachers from School E had to cancel on the day of the planned focus group discussion, on 14 April 2018. It was decided to go ahead, as the teachers from Schools V and PL were already at the venue. A focus group discussion with the School E teachers was held at their school eleven days later, on 25 April 2018.

The two focus group discussions were initiated each time with the question: “Let us start at the beginning of the year before formal writing is introduced to the learners. What difficulties did your learners experience?” The Grade 1 teachers were forthcoming and interacted well. The researcher ensured that each participant was given an opportunity to speak. The teachers also asked one another questions relating to writing utensils, marking the writing lines and handwriting problems experienced by the learners. The teachers all presented as supportive of one another and were happy to exchange ideas.

3.6.2 Audio-recording

Flick (2015: 159) opines that audio or video recording is more comprehensive than making notes. Merriam and Tisdell (2016: 149) caution that video cameras are conspicuous and may hinder the participants from participating freely. Indeed, the participants in the first focus group discussion were very aware of the video camera and the audio recorder at the beginning of the discussions, but they soon became engrossed in the discussions and did not seem restrained in any way.

The participants in the second focus group discussion were more aware of the video camera than the audio recorder, and often looked towards the video camera. The researcher assured them that photographs of the learners’ work they had brought along as evidence would be recorded, as it would not show up clearly on the video. The second focus group consisted of only three participants, and although the discussion did not flow as easily as the first focus group’s discussion, it still was a productive session.

3.6.3 Field notes

Merriam and Tisdell (2016: 149) describe field notes as “the raw data from which a study’s findings eventually emerge”. Although written notes were taken during both focus group discussions, it was an arduous task and the audio and visual equipment stored a more detailed account of the discussions. Memory would not have sufficed, as pointed out by Merriam and Tisdell (2016: 149).

3.6.4 Transcription

Even with the combination of a visual account, audio account, memory and written notes on the focus group discussions, it was still necessary to transcribe the discussions as soon as possible after it had taken place, as advised by Merriam and Tisdell (2016: 150). The guidelines on interview protocol and transcribing the interview, using audio and/or visual aids (Creswell, 2014: 194) were considered and adhered to. The transcriptions consist of a heading that include the date, venue, the participants introducing themselves, as well as the research question which was presented to the group, which started the discussions. It also show the follow-up questions that kept the discussions focused and enabled the researcher to clarify any unclear descriptions or statements by the participants. The transcriptions were typed. The focus group discussions were concluded with a word of thanks and appreciation.

3.7 Data analysis and interpretation

The steps outlined by Creswell (2014: 197) were used as a guide in preparing for the data analysis and interpretation of the study.

In order to proceed with the data analysis, the focus group discussions that took place at the restaurant and at School E were transcribed. Consent forms were stored per school, and the evidence from the learners' workbooks were digitally recorded (Braun & Clarke, 2006: 87). Familiarisation with the data took place when the researcher read over the transcriptions while listening to the audio tape at least three times, in order to ensure that the transcriptions were correct (Braun & Clarke, 2006: 87). This was exceptionally useful, as it provided an opportunity to start making notes and marking the codes (Braun & Clarke, 2006: 87). Furthermore, it also transported the researcher back to the venues and reminded of the nuances of the discussions (Rubin & Rubin, 2012: 60, 64).

The coding was done by hand and the evidence that was submitted by the teachers in the focus group was coded according to the school. The themes were identified from the teacher's responses and the evidence that the teachers brought regarding the learners work was considered, which confirmed most of the teachers' observations and comments.

Themes were identified (Braun & Clarke, 2006: 88) according to the frequency of occurrence. According to the evidence provided by the learners' teachers (Rubin & Rubin, 2012: 64) the result of the Grade 1 learners' ability to establish pre-handwriting skills was also evident.

Four main themes emerged from the data (Braun & Clarke, 2006: 88). Once the themes were identified, analyses of the Grade 1 teachers' narratives, observations and experiences under the themes were also noted. From these, sub themes were derived. Any corrective strategy or

effort the teacher mentioned in assisting the learners struggling with pre-handwriting skills was also considered as well as the effectivity of these strategies, as all these actions highlighted the experiences that the Grade 1 teachers encountered when interacting with the learners.

3.7.1 Quality criteria

Criteria for quality research have been a concern for more than twenty-five years, when Lincoln and Guba (1985: 290) asked the question, “How can an inquirer persuade his or her audience that the research findings of an inquiry are worth paying attention to?” Values for all quality in qualitative research, like all social knowledge, are never constant and change within each context (Tracy, 2010: 837). Tracy (2010) thus delineated eight universal hallmark criteria that are applicable when measuring/describing quality in a qualitative research setting (Tracy, 2010: 839-848). These criteria were applied in this study with the aim to enhance quality.

Eight quality criteria in qualitative research (Tracy, 2010: 839-848).	Application in the study
1. Worthy topic	The topic chosen for this research study was relevant, timely and significant, as in the South African CAPS document there are no guidelines for teaching handwriting skills to Grade 1 learners.
2. Rich rigour	To obtain this aspect it is suggested that there are sufficient, appropriate theoretical constructs, which yield enough data and that there was enough time spent in the field to obtain data (Tracy, 2010: 840). As I have been a teacher in the Foundation Phase for the last 28 years, I know that the first few weeks of the Grade 1 school year can be telling, in the sense that perceptual fall-outs are relatively easy to identify, learners’ self-concept is honest and undisguised; and also, the learners’ level of pre-handwriting skills show their level of readiness for formal handwriting instruction. These first few weeks at the onset of formal schooling is probably the best time to evaluate the young learners’ pre-handwriting skills in order to provide assistance and avoid problems with handwriting. The four weeks spent on observation and data gathering were therefore sufficient in terms of pre-handwriting difficulties to have been identified and for learner support to commence. Data collected gave clear evidence of the themes identified, and correlated with the information gained from the literature review.
3. Sincerity	To attain this aspect, self-reflection about subjective views, biases and the drawn conclusions are required (Tracy, 2010: 841). To achieve this in the study, I met with the school principals in person to explain the research project to them. I then met with the Grade 1 teachers and explained the study to them as well. The letters of consent were left at the schools for consideration, and they brought

Eight quality criteria in qualitative research (Tracy, 2010: 839-848).	Application in the study
	<p>the signed forms along to the focus group discussions. The participants had received copies of the transcriptions, and had time to study it before signing it. The Grade 1 teachers had no objection to being recorded. I offered to take photographs of the learners' work to save the teachers from having to spend time on making photocopies. The teachers from School V made booklets of the evidence they wanted to provide me with. They said they could see I did not want this project to be a burden on them, but they did not mind at all.</p>
4. Credibility	<p>Tracy (2010: 842), along with Rubin and Rubin (2012: 65), state that credibility is attained by proof that the researcher had interacted with people who are knowledgeable about the phenomenon that was researched. Resulting in, above others, thick description, concrete detail and member reflection (Tracy, 2010: 840).</p> <p>As this research project aimed at identifying the challenges Grade 1 teachers have with pre-handwriting skills at the beginning of the school year, I had to approach Grade 1 teachers. It was a plus point that these teachers are all experienced Grade 1 teachers. I had made it very clear to the teachers at the time of explaining the purpose of the research project (as suggested by Nieuwenhuis in Maree, 2016: 123; Creswell, 2014: 185 and Flick, 2014: 488), that the learners should not be made aware of anything special regarding their work in order for the research to be credible. I, as the researcher, never observed in the classrooms. The findings stemmed from the teachers' reporting, their interactions and observations, which provided data for the focus group.</p>

5. Resonance	<p>The effect and reverberations that the research has on its audience (Tracy, 2010: 844), evoking sympathy, empathy and identification from its readers. Furthermore, naturalistic generalisations, which can be considered transferable (empathetic validity) as the reactions resonate across a variety of contexts or situations (Tracy, 2010: 845). As Nieuwenhuis in Maree (2016: 124) poses, transferability enables the readers to associate parts of a study with their own encounters or research and is confirmed when the participants are typical to the context, and the circumstances to which the research outcomes apply. In this project the context is Grade 1 teachers' experiences' with learners struggling with pre-handwriting skills. Merriam and Tisdell (2016: 253) posit that transferability is an external validation of a research project, meaning the degree of applicability to similar situations. Through thick description and purposeful sampling, transferability is increased (Nieuwenhuis in</p>
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Eight quality criteria in qualitative research (Tracy, 2010: 839-848).	Application in the study
	Maree, 2016: 124), which would make the research situation more comparable to a similar situation.
6. Significant contribution	To answer this aspect, one must ask one general question, which is “how will this study contribute to our understanding of social life?” (Tracy, 2010: 846). This question includes aspects such as will the study extend knowledge, improve practice, generate research, liberate or empower (Tracy, 2010: 845). In this study twelve themes were identified that need to be addressed in considering a pre-handwriting programme to fill the void in the CAPS document. Thus, this study might indeed make a significant contribution to Education.
7. Ethical	Ethical aspects are always on the forefront and in doing so consideration is given to procedural, situational cultural, relational and exiting ethics where the scene is left in an ethical manner and the research is disseminated to all involved fairly and understandably (Tracy, 2010: 86). In this study, procedural ethics were adhered to as prescribed by the ethics committee of the North-West University. Letters of consent, transcriptions, raw data and evidence are stored in a secured safe for 5 years before being shredded and destroyed. In terms of relational ethics, I have established relationships with the Grade 1 teachers in order to make them feel comfortable in sharing their observations and experiences, but our relationships are on a friendly, yet professional level. In order to secure situational ethics, I have coded the participating schools and all participants. To fulfil exiting ethics I will report the findings to the Department of Education, the schools that participated in the study, and to other schools, should they show an interest in the results of this study.
8. Meaningful coherence	Tracy (2010: 848) describes meaningful coherence as studies that have achieved their stated purpose, accomplished what they set out to do, used methods and practices that met well with theories and paradigms, and finely connected with the literature that was reviewed. In this study, I have done a thorough literature review to learn how the challenges of learners struggling with pre-handwriting skills had manifested, and how the learners were assisted. It soon became clear that struggling learners abroad were referred to occupational therapists. Many foreign schools had occupational therapists on site. We know that this is not the norm in South African schools, and therefore Grade 1 teachers need to be empowered to assist these learners. The literature shows very clearly how poor handwriting skills can have a negative impact on a learner’s school career. It is, therefore, imperative for teachers to have clear guidelines on how to teach handwriting in the first year of formal

<p>Eight quality criteria in qualitative research (Tracy, 2010: 839-848).</p>	<p>Application in the study</p>
	<p>schooling. Such a set of guidelines should be well informed, in order to learn from Grade 1 teachers' experiences what young learners struggle with regarding pre-handwriting skills.</p>

3.8. Ethical considerations

3.8.1 Informed consent

Flick (2015: 32) states that people should be informed that they will be studied, and said people should participate willingly. However, because Grade 1 learners are known to want to please their teacher, knowing that they were observed for a special purpose could have affected the outcome of the study, which was recognised by Flick (2015: 33). As the Grade 1 learner, being a minor, could not give written consent, written consent was obtained from the learner's parents. This entailed permission to observe the learners and to disclose evidence of written work for the purpose of the research project. The learners were never told that they were observed for a specific reason, or that their work would be (or afterwards, had been) submitted for a specific cause; to them it was "business-as-usual" in the classroom. The researcher had not been present in any of the classrooms, resulting in the researcher being a complete observer (outsider), as described by Nieuwenhuis in Maree (2016: 91), and only listening to the reporting of the participants in the focus groups.

Obtaining the informed consent was an interactive process whereby parents had time to decide whether they wanted their children to participate, and to consider the entire process of obtaining the data for the study. All risks and benefits were stated on the consent form and the parents were afforded the opportunity to ask any questions and give comments. Detail of this form is attached (See appendix 1).

3.8.2 Voluntary participation

The principals and chairmen of the School Governing Body of the 3 schools, the 8 Grade 1 teachers and the parents of the 10 Grade 1 learners were made aware that participation in the study was voluntary, and that they could withdraw at any time, with no consequence. This assurance was also given in writing on the consent forms the parties involved had to sign, and repeatedly discussed with the parents. As the protection of the participants' identities was of paramount importance to the researcher, it will be discussed in detail in the following paragraph.

3.8.3 Privacy, confidentiality, and anonymity

Privacy, confidentiality and anonymity of the study rests on the integrity of the researcher (Merriam & Tisdell, 2016: 265). Flick (2015: 36) recommends that names, addresses and places of work should be changed, especially in a small community, in order for participants to not be recognised. The participants and the researcher signed an agreement in which the participants' privacy was to be protected, all information that was gained throughout the study would be treated as confidential, and no disclosure of any information concerning the children would be made. This agreement was undertaken to ensure the anonymity of all the participants. After transcribing the focus group discussions, it was immediately coded according to schools where the information was obtained and pseudonyms were allocated to each participant in order to keep to the written agreement.

3.8.4 Protection from harm

Researchers have the responsibility to be ethical in their daily conversations, as they are bound firstly by their integrity, and secondly by the ethics committee of their institution, to keep the information gleaned from a study as confidential (Rubin & Rubin, 2012: 85). All the Grade 1 learners in the classrooms were merely observed by the Grade 1 teachers, reducing any risk to the children. The learners that presented with difficulties in pre-handwriting skills were assisted by their own teachers, so that the learners were not disadvantaged in any way (Flick, 2014: 51). Any interactions between the learner and the teacher was considered normal, in that all interactions took the form of the teacher's daily activities with the learner.

3.9 Conclusions

This chapter described the methods used to obtain data in this study, confirmed that all participants were treated with respect, and discussed how quality was retained regarding the data by using the eight aspects of Tracy's (2010) quality criteria for qualitative research. The next chapter will cover the results of the data and describe how the data were analysed and reported. Furthermore, the findings will be discussed in more detail.

CHAPTER 4: FINDINGS OF THE STUDY

“I saw that bad handwriting should be regarded as a sign of an imperfect education.”
Mahatma Gandhi (1927)

4.1 Introduction

The findings of the study are presented in this chapter, which stem from the data collected in Chapter 3. The data that were collected explored the experiences Grade 1 teachers had with learners who experienced challenges with handwriting.

4.2 Results of the study

Four main themes were identified from the data that were analysed. Within these themes, certain sub-themes were also evident. These themes and sub-themes are summarised in Table 4.1.

Theme 1: Fine Motor Skills	<i>Sub-themes:</i> Pencil grip and letter formation
Theme 2: Visual Memory	<i>Sub-themes:</i> Direction, space and reversals
Theme 3: Intrinsic Physical Aspects	<i>Sub-themes:</i> Low muscle tone and midline crossing
Theme 4: Extrinsic Environmental Aspects	<i>Sub-themes:</i> Seating position, writing tools and teacher training for Grade R

Table 4.1 An overview of the themes and sub-themes that were evident in the Grade 1 teachers’ experiences of learners’ pre-handwriting challenges

During the discussion of the themes that were identified, a definition will be provided of the construct. This will be followed by relating the theme to the research question in an effort to emphasise the challenges that the teachers encountered, and in doing so, shed light on answering the research question.

4.2.1 THEME 1: Fine motor skills

Fine motor tests typically include multiple tasks with visual, cognitive, and manual dexterity demands (Cameron *et al.*, 2012: 1230). Related into practice it means drawing with a pencil to either copy or generate an image, build with building blocks (spatial organizational skills) or to match motor movement with an external visual stimulus (copying from a board).

During the data analysis, fine motor skills presented as a challenge in pre-handwriting skills. The Grade 1 teachers described difficulties with fine motor skills such as clumsiness when constructing jigsaw puzzles:

“...they struggle to fit in the pieces and also to even pick up the pieces from the table.”

Problems with their fine motor coordination were also evident when the learners played with clay:

“...the poor child could handle the clay. When we asked him to form numbers or letters, it would take him a really long time to get anything done.”

The child tended to work with the clay on a board and only after a time he felt confident to use both his hands.

“... he liked to roll it in a little ball, so I encouraged that because obviously, it was another skill right now. And then we rolled it into little snakes and that was hard for him; the clay kept on falling...”

After these exercises, the teacher commented:

“...when he had to pick it up, you could see he needed lots of training still for his little fingers”

Another teacher remarked that when she gave him a pegboard, the child found it difficult to work to the pace of the other children and even to “...just to pick up the colour or the peg” caused a great problem for the learner, impacting on his finishing time. Furthermore, learners struggling with handwriting also presented with problems copying: they found copying difficult, even if they had to copy their names.”—The teacher elaborated and said:

“You write it on a line, you give it to them and they can’t copy it; they can’t even copy from the board or from something next to them”

The Grade 1 teachers seemed to be very aware of these challenges and tried their best to ameliorate the situation:

“...I worked with him. I really worked with him, and we did finger exercises”.

Everything was done to try and improve the learners’ skills:

“... I also give them the beads and string. It was also difficult for them to put the string through the beads as they held the string quite far back and tried to put it in; they sometimes hold it near the end but they still struggle. Sjoh”.

Another participant explained how she assisted the learner with fine motor skills by creating a picture with bits of torn paper. The rules of the exercise were that no learner was allowed to use a pair of scissors and only had to tear the paper to create the picture.

“I found in my class we tear paper into small bits to paste. But one of the learners couldn’t do the tearing; he would grab the scissors the whole time. And I’d tell him no, no scissors, you must use your hands. Even a single paper. He was struggling just to tear the paper. So there was also fine motor problems”.

After discussing this main theme, it is essential to briefly discuss pertinent sub-themes that are directly influenced by problems encountered by fine motor problems.

The main theme regarding fine motor coordination occurred in many of the sub-themes that were identified. There were two sub-themes that will be discussed under the main theme of fine motor skills, as follows: pencil grip and letter formation.

4.2.1.1 Sub-theme 1.1: Pencil Grip

Pencil grasps or grips are usually classified according to three influences: firstly, the position of the thumb and secondly, the number of fingers on the shaft of the pencil; and lastly the position of the finger joints (Schwellnus *et al.*, 2013: 218). The ideal grip is as follows (Schwellnus *et al.*, 2013: 218): the thumb positioned opposite to the fingers on opposite sides of the pencil. Historically, the dynamic tripod (DT) pencil grip has been promoted as the optimal grasp pattern because it allows for the fine dexterous movements of the fingers to create letters (Elliott & Connolly, 1984). Therapists and teachers commonly recommend that children, especially those with handwriting difficulties, use the DT pencil grasp (Schneck & Henderson, 1990).

“...the fine motor skills affected everything else we did, especially the pencil grip - everything was because of the fine motor skills.”

All of the eight Grade 1 teachers experienced pencil grip as being problematic in pre-handwriting skills, not only for the ten participating learners that were observed, but for most of the learners in their classes.

“...my kid’s problem is the pencil grip. He holds it like this (demonstrates a hand around a pencil) - it is like a 4-year-old”.

Another participant added:

“I always find that amazing, because sometimes at age 18 months you’ll see that children have a correct pencil grip. Then they go to pre-school and not long after, you see this child colours like this (demonstrates hand around the pencil)”.

Participants’ responses put a certain degree of problems with pencil grip down to the learners copying their parents and said some parents have defective pencil grips which are copied by the child. However, it is with gratitude that teachers appreciate the parents’ efforts to teach their children to write, but, unfortunately, parents do not always teach the young ones correctly, as they are not aware of the inefficient, incorrect pencil grips that the child learns, resulting in the learners entering Grade 1 with this deficit. This problem was also noted by other participants who pointed out that Grade R classes at pre-schools do not all teach a correct tri-grip. A triangular, soft, rubber pencil grip that fits over the lead pencil forces the learner to maintain a tri-grip, was often referred to by the participants as a remedy for this (see figure 4.1).



Figure 4.1. The triangular, soft rubber pencil grip

Only one of the participants reported on a left-handed learner experiencing difficulties with pencil grip, because the learner also turns her book to accommodate the writing exercises, which compounds the problem with the pencil grip.

The second noteworthy issue that was raised regarding the pencil grip that caused Grade 1 learners problems with their handwriting, was an alternative pencil grip that fits over the lead pencil, which resembles a small, moulded lump of clay. This assistive device guides the learner’s fingers into the tri-grip (see figure 4.2).



Figure 4.2. An alternative pencil grip

Participants pertinently remarked that even though the learner was experiencing difficulties with fine motor skills, these devices definitely improved the child's handwriting, and to such an extent even the learner's parents noticed the improvement in the child's handwriting. All because the correct pencil grip had been acquired.

4.2.1.2 Sub-theme 1.2: Letter formation

The second sub-theme that was identified, was letter formation. In order to write, a learner needs to be able to control their fine motor abilities; secondly, master eye-hand coordination; thirdly, have the ability to cross the midline and, finally, be able to use their dominant hand to hold a pencil and make a mark on the paper, which will symbolise a letter or a sound (Shaw, 2011: 126). Only when these aspects are mastered can the child begin to form shapes or letters on paper. Therefore, when handwriting are performed, the most common errors that occur are letter formation (57%), reversals (52%) and overall neatness (76%) (Graham, Harris, Mason, Fink-Chorzempa, Moran, & Saddler, 2008 cited in Shaw, 2011: 126). The difficulty with handwriting, especially letter formation, requires greater resources as it can interfere with a child's confidence and competence (Banumathe *et al.*, 2016: 19).

Often, when forming letters for handwriting, children start at the base line for all letters and stroking away from their bodies to complete the letter form (Sheffield, 1996: 28). This is why many students who are referred for occupational therapy do not have dysfunctional skills; instead, they need structured and consistent instruction on letter formation (Asher, 2006: 463).

The data collected from the participants also revealed this problem.

"They are starting from the wrong position. The "e" and the "g"- wrong starting point, it is completely wrong. The "g" is a circle from the left, with a tail. She has to lift her hand to make the tail."

Another participant, in acknowledging this challenge, gave a strategy which she uses to assist the learner:

"...as I say, I make up stories for them to remember the starting position but it still goes on..."

Participants also raised the aspect of difficulties with eye-hand coordination in pre-handwriting skills of the learners they observed. Learners struggle to follow through with straight or curved

lines, for example, when they have to join the dots. Evidence of these problems was shown during the sessions (See figure 4.3).

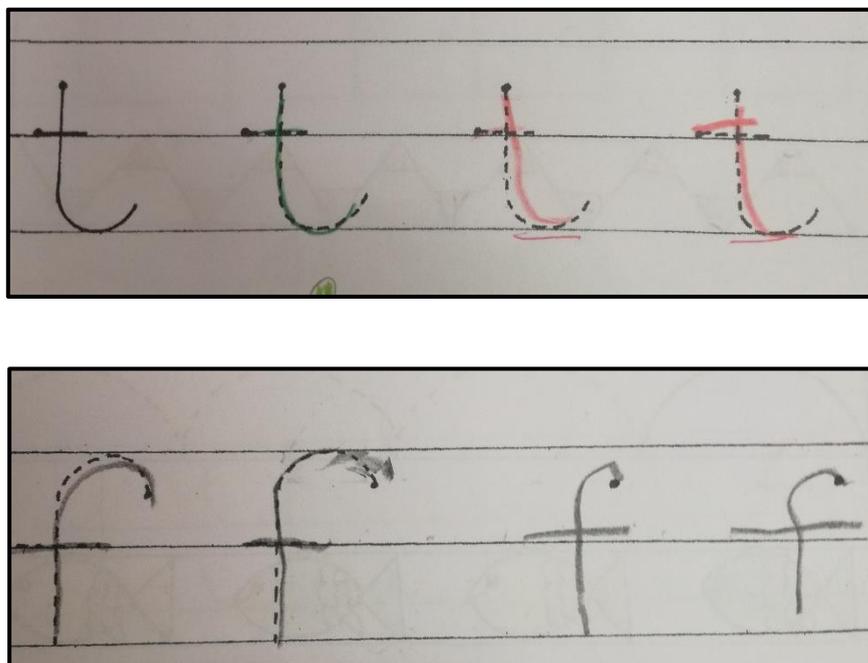


Figure 4.3. The inability of the learner to follow a prescribed direction (join the dots exercises)

4.2.2 THEME 2: Visual memory

Visual Memory is part of visual perceptual skills, which focuses on the learner's ability to recall visual information. It is critical for reading and writing (Coetzee & Gerber, 2018: 41), as when a child is writing, they must recall the form as well as all the parts of the letter that they are writing. Thus it can be explained as the transference of visual perceptions into motor functions (Beery & Buktenica, 1997 as cited in Coetzee & Gerber, 2018: 41). The entire process must thus be done from remembering what they have seen. It is, therefore, logical to deduct that learners who struggle with visual memory, present with problems such as copying letters and words; resulting in a slow work pace and problematic letter formation.

One participant noted the evidence of visual memory being a factor for successful pre-handwriting skills when she related how she had experienced a learner struggling to copy three basic geometric shapes from the blackboard and attributed it to a deficiency in visual memory. Another learner's workbook also revealed what the teacher attributed to visual memory, where the learner had to copy from the blackboard. The learner's workbook, which was brought as evidence by one participant, showed the inconsistent letter formation of the "n" and "s". The first

downward stroke is also omitted from the “m”, suggesting a discrepancy in visual memory (see figure 4.4).

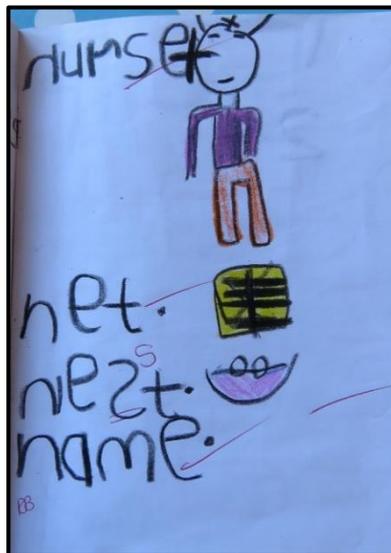


Figure 4.4 A learner’s workbook, showing the inconsistent letter formation.

The only sub-theme relevant to *visual memory* that will be discussed here is: reversals, direction and space.

4.2.2.1 Sub-theme 2.1: Reversals, direction and space

Letter and number reversals often occur in learners’ written work when they are required to manually encode tasks (Richmond and Taylor, 2014: 2). Handwriting difficulties characterised by letter reversals could be associated with language deficits (phoneme association) rather than visual perceptual difficulties (Richmond and Taylor, 2014: 2). However, some reversals and left-right confusion are associated with the normal development and maturation of the nervous system of learners up to the age of seven years (Richmond and Taylor, 2014: 3). With respect to this aspect, participants also reported the following problems:

“... see the spacing and the letters look almost fine... but, the starting position is not fine (shows a page in a workbook)...the same is written twice, and the same reversals.”

The second aspect of this sub-theme deals with direction and space, which is closely linked to reversals.

Difficulties with spatial orientation were classified as reversals, such as “b” and “d”, writing in mirror image, and incorrect starting point such as with “e” and “g”. Participants also reported spatial orientation as a difficulty in pre-handwriting skills. One participant came up with a good

idea that assisted the learners with spatial orientation and directionality; she orientated the learners by using the following method:

“Lucky for me I’m right opposite the tuck shop. So what I did was to let the children sit like this (shows a row in the classroom). I talk all the time while I’m working on the board. I have the advantage because the tuck shop is next to the class, so I tell them: draw your line, the same side as the tuck shop, and if the tummy shows to the door (away from the tuck shop) the letter is a “b”. But if it’s the “d”, I tell them, the line straight stays the same but the tummy shows to the tuck shop”.

4.2.3 THEME 3: Intrinsic physical aspects

Intrinsic factors that the participants mentioned relating to intrinsic physical traits were divided into two sub-themes, namely low muscle tone, which they experienced with some of the learners, and midline crossing problems.

4.2.3.1 Sub-theme 3.1: Low muscle tone

A large proportion of the population experiences difficulties with muscle tone (Goo, Johnston & Tucker, 2018: 661), making the accurate assessment of muscle tone an essential practice for diagnostic, prognostic, and treatment planning purposes. Active tone can be defined as an individual’s “ability” or “readiness” to respond to environmental demands (Goo *et al.*, 2018: 661). The measurement of active muscle tone is done by observing how a child engages with and reacts to the environment (Goo *et al.*, 2018: 661). The measurement is usually observed by considering the response to gravity during self-initiated movement, sensory stimulation or physical facilitation (Goo *et al.*, 2018: 661).

This aspect was easily picked up by the participants and reported, as was noted:

“The same boy that had low muscle tone, you could see it in the way he walks, the way he sits at the desk, even on the carpet. He can’t sit like a “normal” child, he’s always laying against something, or against the wall, he’ll try and sit at the back, not at the front. He couldn’t even cross his legs and sit up straight for a few minutes. We don’t....everything is short, short, short. (Meaning the children do not sit still for long periods of time.) He couldn’t do that. We tried him on the jungle gym, big problem. He actually fell off from the top the one day. I just heard Boom!”

Muscle tone was so important to the participant that she felt it necessary to request the aid of the parents.

“I actually spoke to his mother because I felt she has to also help a bit. And she does - she wakes him up early every day and they run – him and his brother.”

The same participant continued to explain how the whole class benefits from gross motor activities that strengthen muscle tone, and she keeps a keen eye on the one specific learner whose parent’s assistance she has enlisted. This shows ongoing support from the teacher; the problem is not simply handed over to the parent to deal with.

“We are fortunate at our school to have a little park with nice jungle gyms and similar equipment, and for park time every day before home time, I let them do obstacle courses and we also do gross motor activities to address not only the muscle tone, but also the midline crossing, which is also a problem. So we practise that every day, about. If we have the time we would do that. It looks like he has improved, I think he’s a bit better. Obviously, we’re not where we want to be, but we’re getting there, I believe.”

4.2.3.2 Sub-theme 3.2: Midline crossing

Most of the participants were aware of the value of midline crossing in pre-handwriting skills and said that they often did stretching exercises based on Brain Gym® with their learners. It was reported that the stretching exercises warm the learners’ bodies and also relax the learners. The use of the “lazy 8” exercise, as a midline crossing exercise, was also suggested.

“And also with Brain Gym. We do a bit in class in the mornings to warm up our bodies, so we do a lot of the midline crossing activities. I let them really stretch it out in the mornings (demonstrating sideways movements). I do think it helps a bit - definitely.”

4.2.4 THEME 4: Extrinsic environmental aspects

Extrinsic environmental aspects are contributing factors over which the learner does not have control, yet it has a direct influence the learner’s handwriting. Examples of external factors are instructional procedures and materials used during writing (Marr, Windsor & Cermak, 2001: 3). This theme was divided into three sub-themes, namely seating position, writing tools, and teacher training; all external factors that negatively influenced the learners’ handwriting.

4.2.4.1 Sub-theme 4.1: Seating position

“I have one boy. I must share this with you. He is so short. You would see the whole time he is doing this and doing this (demonstrating rocking in her chair, trying to get to a higher position) and then I realized his feet...they were not touching the floor!”

The correct seating position is of utmost importance, as the one participant related. This issue was of such importance for handwriting skills that the child's uncomfortable seating was the direct cause of his poor handwriting.

"You know, as teachers you say sit still, put your feet down. Sit properly. (Everyone laughs). Somehow one day my eyes went down and I saw his little feet going "choo-choo". (Makes swinging motion with her hands). Then I knew".

Furthermore, the size of the furniture was also an important aspect reported by participants.

"... the size of the table he was sitting at and the chair contributed to the handwriting problem because I couldn't get the correct size of the table or chair. He could not sit properly or put his feet down. His back would not touch the back of the chair. It was just funny for me, but I realized the furniture they use contributes to the sitting position, and because he could not sit properly, he could not write properly".

Furthermore, left-handed learners have to sit on the left-hand side of a shared desk to enable them to turn the book slightly in order to write more comfortably, another notable issue that was reported during the focus group session.

"... the seating position, you know, that's why I moved her around, because she is left-handed - her brain is positioned different(ly). I'm trying to understand, I'm trying to help. But what do I do now when I see there's a problem?"

4.2.4.2 Sub-theme 4.2: Writing tools

One of the most defined problems was the writing instrument that the learner used. It was reported that a triangular pencil grip tool generally improved handwriting and the roll-up wax crayons (the smooth cylinder shape) were not conducive to learning handwriting skills.

"... a triangular pencil contributes more to the children's success, because I think as the Twisters are round, the Twisters would roll, it becomes messy. She would just be all over the place".

Furthermore, the tri-grip pencil crayons and tri-grip lead pencils even assisted with left-handed learners, because it helped the learner to hold the pencil correctly. It was also noted that many Grade 1 learners revert to an immature pencil grip when using the roll-up wax crayons, reinforcing again the importance of the writing tool.

4.2.4.3 Sub-theme 4.3: Teacher training

The final sub-theme generally indicated that not all Grade R teachers in the urban area of Polokwane were trained and qualified to teach. According to the participants, some Grade R teachers have attended a short course, sometimes literally as short as a day or two, in order to fulfil the need for ECD practitioners, as required by the DoBE.

“And the other thing, maybe it is because for Grade R we need practitioners, those who were trained to teach Grade R, but somewhere, somehow, it is not happening and that is where we experience a lot of problems”.

Participants clearly stated that they held the opinion that handwriting problems stemmed from incompetent Grade R teachers, to teachers that were not qualified at all.

“You get Grade R teachers that are not qualified to teach, but they are in a Grade R class. They have done a course, but they didn’t necessarily learn the correct methods, and the course might be a one day course, or a two-day course - a short course”.

The participants unanimously ascribed many perceptual difficulties for pre-handwriting skills experienced by Grade 1 learners in their class, to a lack of Grade R teacher training.

“And also the other problem is from the crèches coming to the Grade R’s. Those...there are a lot of crèches here in town but what is happening there, it differs. They are not doing the same thing. Some are teaching the correct way of handling the instrument, some are not, or maybe they are, but we do it the other way round, because I don’t know if it’s correct, we don’t have a specific way of holding the right way. Because some will say this way is okay (demonstrating the tri-grip; it depends on what was done by the crèches or in Grade R”.

Moreover, many of the participants said that they had had limited tertiary level to teach handwriting, but this varied from “taught briefly”, to “received instructions on how to teach handwriting”, to “we were trained”, clearly reflecting an inconsistent instructional level.

“At Unisa, we were taught briefly on how to teach handwriting in one of the modules.”

4.3 Summary of findings

In this chapter, the findings of the focus group discussions and the written evidence was reported upon. Out of the main themes that were identified, there seemed to be a unanimous consensus that the fine motor skills of learners are most problematic when facing handwriting challenges as this aspect affects the pencil grip and actual letter formation. The next two themes, visual memory and actual physical problems, also add to handwriting challenges; however, teachers

seem to be able to remediate these problems in the best possible manner, which tends to be a “trial and error” approach. The final theme, the environmental or extrinsic factors, is very prominent in the teachers’ comments. Some of the sub-themes are immediately handled and solutions found which ameliorate the situation, but the lack of training of Grade R teachers seems to be a genuine concern for the Grade 1 teachers, which frustrates them, but they acknowledge that it is an aspect which they can do very little about.

In the next chapter, a discussion on the recommendations will be done on how these elements culminate in being successful at handwriting.

CHAPTER 5: DISCUSSION OF FINDINGS

“The only thing most people do better than anyone else is to read their own handwriting.”
- John Adams (1781)

5.1 Introduction

In this chapter, the findings of the focus group discussions will be discussed by looking at the results from a constructivist perspective. This perspective will shed light on and make sense of the experiences of Grade 1 teachers regarding challenges in the pre-handwriting skills of their Grade 1 learners.

5.2 Theme discussions

5.2.1 Theme 1: Fine Motor skills

There were two sub-themes in this category, namely pencil grip and letter formation.

5.2.1.1 Pencil grip

Gatouillat, Dumortier, Perera, Badr, Gehin & Sejdi (2017: 124) explain that static pencil grips yield a poor handwriting, whereas the dynamic tripod pencil grip allows for more control in the wrist and fingers, which can be seen in the strokes of the writer.

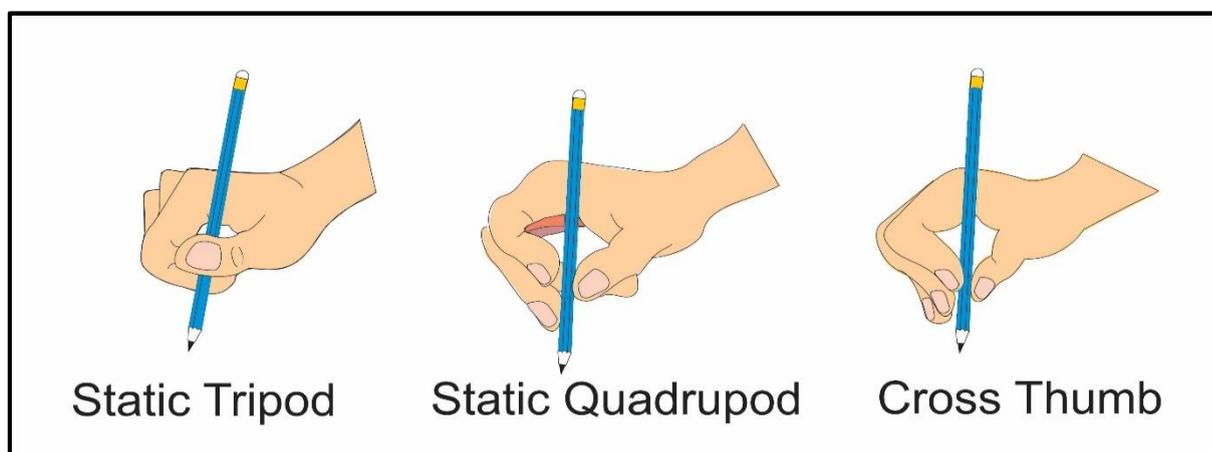


Figure 5.1. Illustrations of static pencil grips (adapted from Gatouillat, et al. 2017)

Poor pencil grips, such as the static pencil grip (See figures 5.2, 5.3 and 5.4), are examples of learners having poor control of the writing tool due to static pencil grips. Figure 5.2 illustrates a static pencil grip, viewed from above, which presents as very stiff (static) grip; this requires the learner to use wrist movements to write, instead of finger movements. Figure 3, a static quadrapod pencil grip viewed from the side, once again highlights the learner's rigid grip, stiffness and inability to move the fingers in order to make writing movements. Figure 4, once

again, reveals a static pencil grip, which is compounded by the learner incorrectly holding the writing tool with their fingers positioned too far back on it.



Figure 5.2. The static pencil grip (viewed from above).

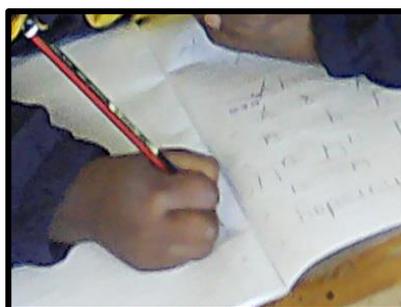


Figure 5. 3. This learner presents with a static quadrupod pencil grip.



Figure 5.4. Pencil control is reduced because the whiteboard marker is held too far from the tip.

A mature or correct pencil grip enables the learner to form letters correctly, as it gives more control over the writing instrument (Dinehart, 2015: 99). A grip that is very tight will cause fatigue from exerting too much pressure on the pencil, and even pain, which might result in the learner switching pencil grip (Schwellnus *et al.*, 2012: 723).

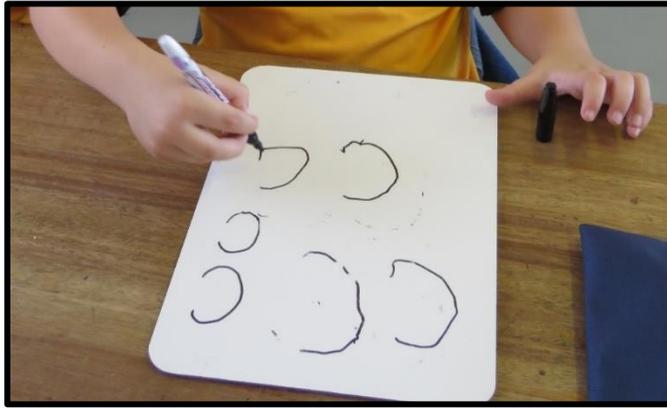


Figure 5.5. This learner has very little control over his writing utensil because his wrist does not rest on the desk.

Even though the learner holds the writing instrument correctly, if the position of the wrist is not correct, then control over the formation of letters and writing strokes suffers (see figure 5.5).

5.2.1.2 Teacher interventions to teach or improve a learner's pencil grip

According to the teachers that participated in the focus group discussions, specific writing utensils are used in a specific sequence in order to prepare the muscles in the dominant hand for writing. Jumbo-sized wax crayons and thick wax crayons are used in the Grade R classrooms at their schools (see figure 5.6), but from the middle of the Grade R year, roll-up wax crayons are introduced (see figure 5.7). The reason for this is that younger children (toddlers) use the whole arm to move the pencil or crayon: with the writing utensil in the fist, they use all of the muscles in the arm to make the marks on the paper. As they develop and their fine motor skills improve, learners increasingly use their fingers and wrists.



Figure 5.6. Jumbo-sized wax crayons big enough for the toddler to hold in their fists while making a mark on the paper.



Figure 5.7. Mid-way through the Grade R year, roll-up wax crayons are introduced to encourage fine motor skills.

The learners use roll-up wax crayons at the beginning of their Grade 1 year (see figure 5.7), and by Term 2 they progress to pencil crayons.

During the focus group, one of the schools started using the thick triangular grip pencil crayons in the first term, before progressing to the thin triangular grip pencil crayon in the second term. These teachers found it to be beneficial for the learners, as they were of the opinion that it served as a constant reminder to the learners to use the dynamic tripod grip. This school continued to use the tri-grip pencil crayons throughout the year (see figures 5.8a and 5.8b).



Figure 5.8a. Tri-grip pencil crayons.



Figure 5.8b. Tri-grip pencil crayons.

Another teacher in the focus group discussion remarked that she finds that, due to their smoothness, the roll-up wax crayons offered less in terms of grip, and hence less control when the learner writes. However, the general progression is that roll-up wax crayons are used during

the first term of Grade 1 and at the beginning of the second term, after which the learners start using pencil crayons (see figure 5.9).



Figure 5.9. Ordinary commercially available pencil crayons.

Another technique mentioned during the focus group was the use of thick, non-slip, tri-grip lead pencils (see figure 5.10). These writing utensils were used from the second term during formal handwriting lessons.



Figure 5.10. Ordinary commercially available thick, non-slip, tri-grip lead pencils.

Alternative suggestions that also emanated from the focus group was the use of ordinary lead pencils with pencil grip aids. These accessories were used with learners struggling with the dynamic tripod grip. There is a variety of these pencil grip aids available (see figure 5.11) as a corrective measure to improve less effective pencil grips.



Figure 5.11. Pencil grip aids that are available to help learners that struggle with an effective pencil grip.

5.2.1.3 Letter formation

Ishak, Khalid, Mahmood & Harun (2014: 817) explain that in handwriting the wrist is needed for vertical and horizontal motions via the muscles in the forearm. The activity of the same muscles extends into the fingers, which means that the wrist serves as a stabiliser during handwriting (Ishak *et al.*, 2014: 817). The thumb has a distinctive joint at its base, which allows for movement in different directions, enabling the learner to produce curved and straight lines that form letters. This makes the collaboration of the thumb and wrist extension very important for good handwriting (Ishak *et al.*, 2014: 819). Yu and Chang (2011: 153) suggest that handwriting is forced when the wrist is not sufficiently extended, as the length of the finger muscles have an influence on the dynamism of the pencil grip, resulting in cramping and poor handwriting quality.

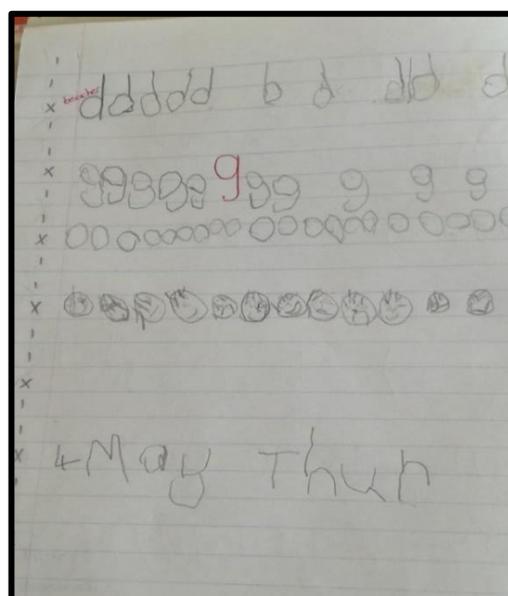


Figure 5.12. The learner's handwriting shows a difficulty in wrist movement.

Figures 5.12, 5.13 and 5.14 are all examples of learners who experience difficulties with wrist movement or agility. In figure 5.12 the learner cannot keep on the lines and tends to rigidly follow a direction that aligns with the angle or position of the wrist. The handwriting displays no movement or flexibility, while letter formation is also very poor. In figure 5.13 the learner again presents with a rigid letter formation (see the letter “r”); the writing is also and very untidy, almost scribbled in colouring in lines, reflecting rigid wrist movements.

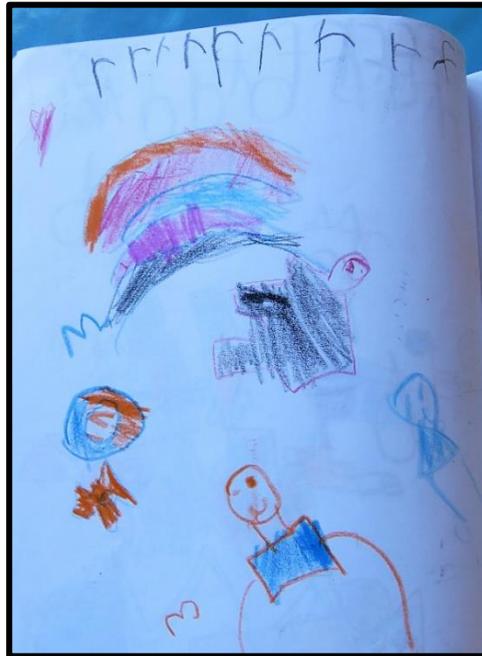


Figure 5.13. Learner’s formation of the letter “r”, and the quality of the colouring in of his pictures are indicative of difficulties with wrist movement.

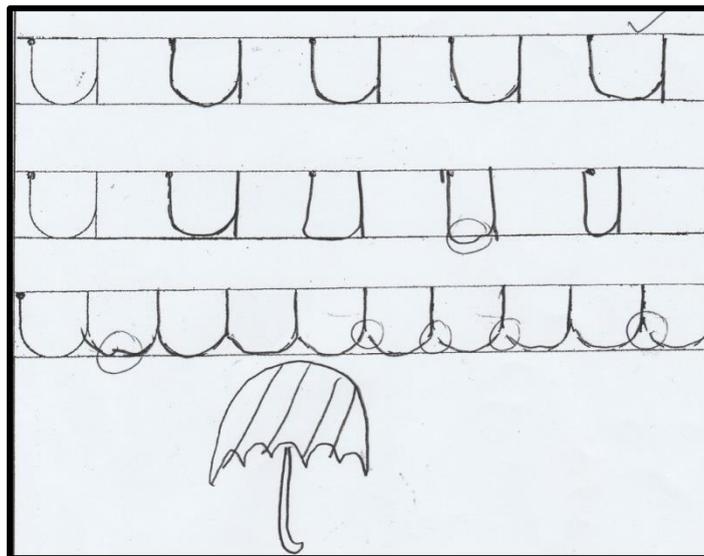


Figure 5.14. Learner presents with difficulties regarding wrist movement.

In figure 5.14, difficulties are seen due to the learner being unable to complete the pattern without lifting his hand for the bottom circular motion.

5.2.2 Theme 2: Visual memory

There were two sub-themes in this category, namely direction and space and reversals.

5.2.2.1 Direction and Space

Bosga-Stork, Bosga & Meulenbroek (2015: 38) evaluated handwriting quality on thirteen spatial orientation characteristics, i.e. “1) writing too large; 2) widening of left-hand margin; 3) bad letter or word alignment; 4) insufficient word spacing; 5) acute turns in connecting joins of the letters; 6) irregularities in joins and/or absence of joins; 7) collisions of letters; 8) inconsistent letter size; 9) incorrect relative height of the various kinds of letters; 10) letter distortion; 11) ambiguous letter forms; 12) correction of letter forms, and 13) unsteady writing trace.” The findings of this research project correlate with these findings of Bosga-Stork *et al.*

Tse *et al.* (2013: 344) posit that spatial orientation makes for legible handwriting and writing within or on lines. Twenty-five per cent of the teachers that took part in this study have reported spatial orientation to be problematic in the acquisition of handwriting in their classrooms, while the other teachers agreed that they had frequently experienced it in the past. In the classroom, a deficiency in spatial orientation in handwriting seems to translate into an incorrect starting point; this, in turn, is the cause of incorrect letter formation - e.g. the “g” is written as “o” (with the “o” often written counterclockwise) and with an added tail, “J” (as shown in figure 5.15). A deficiency in spatial orientation also reflects bad letter or word alignment, acute turns in connecting joins of the letters, irregularities in joins and/or absence of joins (Bosga-Stork *et al.*, 2015: 38).

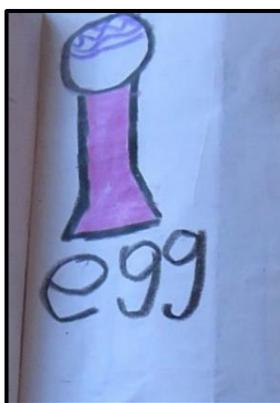


Figure 5.15. An example of the incorrect formation of the letter “g”.

The Grade 1 teachers concurred that they make use of short stories in an attempt to instil correct letter formation. For example, “*The girl has a pretty face and her long hair flows from her head*”. The teachers in the focus groups agreed that stories help with the correct starting point to an extent, but it is not a guaranteed measure in solving the problem.

Bosga-Stork *et al.* (2015: 38) evaluated handwriting quality regarding spatial characteristics, figures 5.16a, b and c reflect the following aspects: writing too large, poor letter or word alignment, insufficient word spacing, acute turns in connecting joins of the letters, irregularities in joins and/or absence of joins, collisions of letters, inconsistent letter size, incorrect relative height of the various kinds of letters, letter distortion, ambiguous letter forms, correction of letter forms and unsteady writing trace

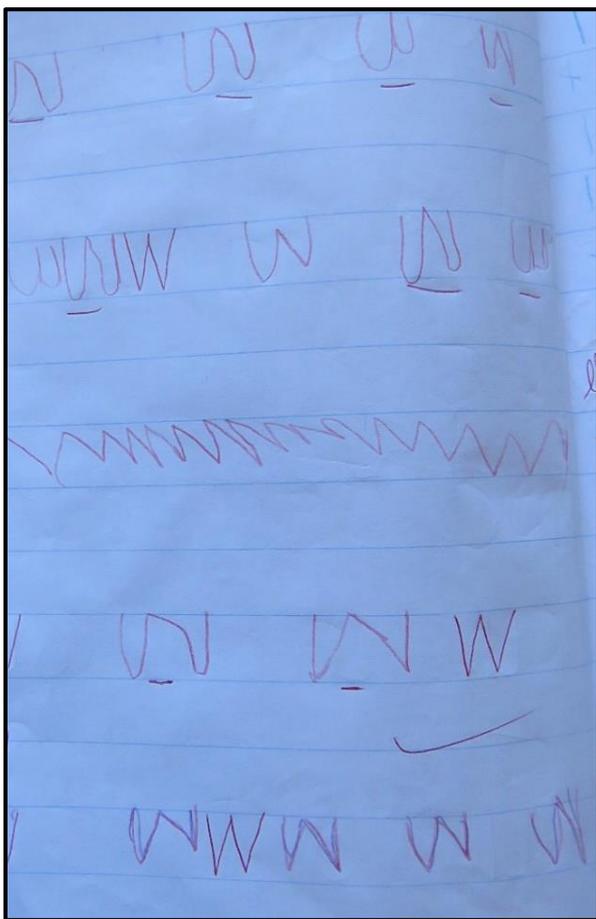


Figure 5.16a

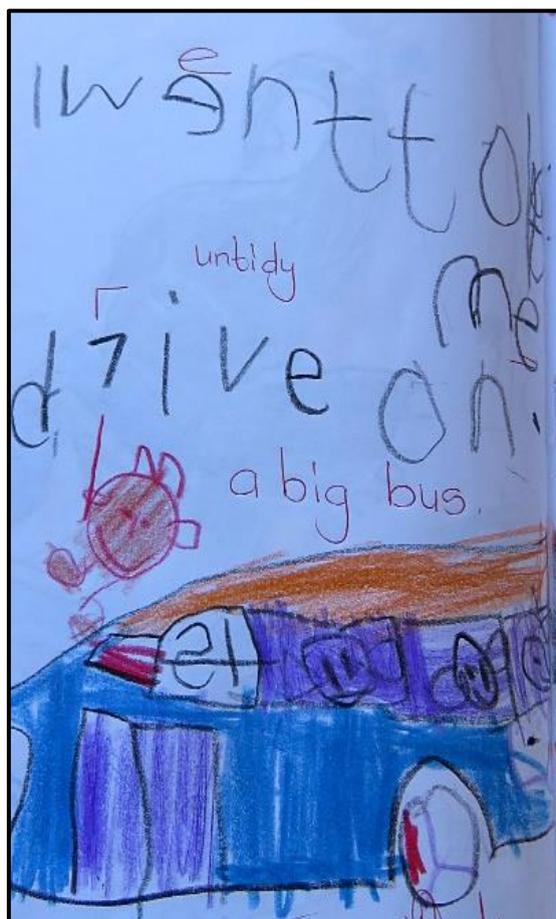


Figure 5.16b.

Figures 5.16 a and b. Handwriting quality regarding spatial characteristics.

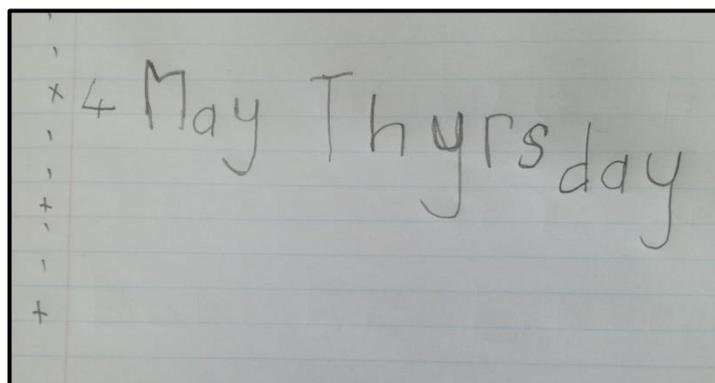


Figure 5.16c. This learner is not yet able to write within the lines due to difficulties with spatial orientation.

5.2.2.2 Reversals

Mather (2012: 172) describes letter and number reversals in young learners as a by-product of the “arm stage”, a stage in normal motor development as an ongoing process, and preceding the development of finger (distal) control. He explains that, in the early stages of handwriting, the right hemisphere of the brain can control the left arm, and similarly, the right arm can be controlled by the left hemisphere of the brain. Mather (2012: 173) posits that poor handwriting correlates with reading difficulties, and therefore, close attention should be paid to reversals in the handwriting of the young learner. As reversals should be viewed as a stage within normal motor development, Grade 1 teachers should not be overly alarmed when learners display reversals in the early stages of handwriting acquisition. Should reversals persist despite encouragement, the Grade 1 teacher may consider further corrective strategies.

5.2.3 Theme 3: Intrinsic physical aspects

There were two sub-themes in this category, namely low muscle tone and midline crossing.

5.2.3.1 Low muscle tone

During the focus group discussion, one teacher reported that a learner in her class was unable to sit up straight in his chair, even for a short time. When sitting on the carpet, he was unable to cross his legs or sit up straight and he would, therefore, lean against the wall. She ascribed this to low muscle tone as described in Flatters *et al.* (2014: 2908). She used the school’s jungle gym area to get the learner moving and for strengthening his muscles. According to her, the learner’s progress is slow, but he is nevertheless showing signs of improved muscle strength in his posture.



Figure 5.17. One teacher reported that she made use of the school’s jungle gym to strengthen the learner’s muscles and improve muscle tone.

5.2.3.2 Midline crossing

Some of the focus group participants mentioned that midline crossing was evident in many of their learners. One participant stated that she starts each school day with Brain Gym® exercises for midline-crossing, and as a warm-up activity. She uses five typical Brain Gym® exercises, such as the arm activation, rocker, double doodle and the Lazy-8. These activities are briefly described below.

In *arm activation*, one arm is extended upward and held by the other arm at the elbow from behind the head. The arm is forced lightly in different directions: forward, backward, to the left and to the right. For the *rocker* exercise, the learners lie on their backs on the floor, knees pulled up to the chest and shoulders flat on the floor, while the hips are moved from side to side. The *double doodle* is executed by standing up straight, keeping the head still while focusing on both hands that are extended forward and performing small circular motions, each hand simultaneously and in an opposite direction. The *Lazy-8* exercise is a simple exercise where the learner stands up straight, and with one arm extended, large circular movements are made to the left and to the right; the hand keep moving upwards where the two circles meet in the middle.



Figure 5.18 Learners doing midline crossing exercises as a warm-up session at the beginning of the school day, with the help of a video clip.

5.2.4 Theme 4: External environmental aspects

There were three sub-themes in this category, namely seating position, writing tools, and teacher training for Grade R.

5.2.4.1 Seating position

Furniture size should be appropriate for a learner. This means that the chair should enable the young learner to sit with the hips at a 90° angle, the feet should be flat on the floor, knees flexed

almost 90° and the lower back should be supported by the backrest (Feder & Majnemer, 2007: 315; Stevenson & Just, 2014: 51). Feder and Majnemer (2007: 315) point out that furniture that is too low will cause forward slouching, whereas furniture that is too high will cause discomfort which will have a negative effect on the learner's written work.

It was heartening to learn that the three urban public schools involved in this research project had sufficient furniture to provide the correct size of furniture for each learner; however, problems were still encountered. See figure 5.19, where the furniture did not match the physical size of the learner; furthermore, the learner was left-handed and was seated on the left-hand side of the desk. Being seated on the left-hand side provided sufficient space for the left-handed learner, but the furniture size hampered the neat execution of handwriting tasks, he was not seated comfortably.



Figure 5.19. Furniture does not comply with the physical needs of the child

In Figure 5.20, the child's desk was too big for him, again influencing his seating position (posture) and creating a very negative impact on his ability to write. This situation creates a slouching posture (Feder & Majnemer, 2007: 315).



Figure 5.20. Both this desk and chair are too big for the learner.

5.2.4.2 Writing tools

From the focus group discussions, it is evident that the Grade 1 teachers agree on the progression system of writing tools: from jumbo wax crayons, to thin wax crayons, to thick tri-grip pencils, to thin tri-grip pencils and pencil crayons. As a Foundation Phase teacher, I know that the roll-up wax crayons were introduced because they are not as messy in the learners' workbooks as the traditional waxy crayons. Another reason for bringing roll-up wax crayons into the classroom was the misconception that they would not break as easily as thin wax crayons. The Grade 1 teachers have to deal with the dilemma of learners coming from Grade R and pre-schools where they have already used roll-up wax crayons. The young learners become disgruntled when they have to revert to jumbo wax crayons when they have already become used to the roll-up wax crayons which are thinner and easier to manipulate when colouring in.

5.2.4.3 Teacher training for Grade R

The Reception Year should not be viewed as a mini-Grade 1. The CAPS document (Department of Basic Education, 2011: 20) clearly defines the role of the Grade R teacher, stating that the daily programme should comprise of:

“ teacher-guided activities, routines and child-initiated activities or free play.”

Teaching handwriting is therefore not part of the Grade R teacher's responsibilities. The Grade 1 teachers voiced their concerns during the focus group discussions regarding incorrect pencil grip and incorrect letter formation which the pre-schoolers acquire at pre-schools and at home. The CAPS policy document further stipulates:

“Before starting to teach formal handwriting in Grade 1, children should follow a pre-writing programme to develop visual discrimination, gross and fine motor and hand-eye coordination, body image etc”. (Department of Basic Education, 2011: 19).

Grade R teachers can greatly assist in preparing young learners for handwriting by concentrating on perceptual skills, which should include visual discrimination, gross and fine motor coordination, hand-eye coordination and body image. A warranted recommendation to ensure quality and comprehensive training, therefore, would be that Grade R teachers be appointed only on credible qualifications: no less than a formal Grade R diploma offered by tertiary institutions accredited by the Council of Higher Education in South Africa.

CHAPTER 6: CONCLUSION

“Handwriting is a very important academic skill – part of our heritage. The loss of this skill is like the loss of a language.”- Glenys Ross (2012)

6.1 Introduction

In this chapter I summarise the findings of my research project, from which recommendations follow. It was a truly rewarding project, which has given me insight into the experiences of Grade 1 teachers regarding the challenges in pre-handwriting skills of their learners. It was noticeable that all of the ten Grade 1 teachers interviewed, in three urban schools, experienced similar challenges with pre-handwriting skills.

6.2 Summary of findings

The copious amount of literature consulted all points out that handwriting is an unmistakably and distinctly important life skill. Handwriting can be an indicator of future academic success in reading, writing and mathematics, as well as an indication of deeper lying physical and developmental problems. Should a learner, therefore, experience difficulties with handwriting, it is vital that the learner be assisted as soon-as possible to avoid the onset/occurrence of learning difficulties that may result from a lack the perceptual skills gained in handwriting. Any handwriting difficulty should be taken seriously and attended to.

The research question I set out to answer was:

What pre-handwriting challenges do Grade 1 teachers experience with their learners?

The objectives of the study were to explore Grade 1 teachers' experiences of Grade 1 learners' pre-handwriting challenges, and to understand and describe Grade 1 teachers' experiences of Grade 1 learners' pre-handwriting challenges. These questions arose because the South African Department of Basic Education (DoBE) prescribes that a pre-writing programme should be followed before teaching formal handwriting in Grade 1 (DoBE, 2011: 19). Yet they neither provide, nor prescribe, any particular pre-writing programme, leaving Foundation Phase teachers to their own discretion as to what a pre-writing programme should entail, how it should be implemented and how it should be assessed.

This situation consequently provides no recommendations or guidelines for a Foundation Phase teacher. Feder and Majnemer (2007: 315) have found that if no standardised methods for

teaching handwriting in the primary school are prescribed, we can be unsure of the type of instruction (the commercially available handwriting programme followed by the teacher), and the duration of handwriting instruction the learners receive, and leaving these decisions up to the teacher, especially a new in-service teacher, could be disastrous.

According to CAPS, the prescribed frequency and duration for handwriting instruction in Grade 1 in South Africa, is 15 minutes instructional time, 4 days a week (DoBE, 2011: 9). The Grade 1 teachers understand this to be the maximum instructional time for formal handwriting lessons. However, they treat every bit of written work as an informal handwriting lesson, constantly reminding the learners of their writing posture, pencil grip and letter formation. This should be seen as good practice, as the young learner learns through repetition and consistency.

Schwellnus *et al.* (2012: 723) opine that the variation of the four most common pencil grips might be because of teaching practices. It is, therefore, imperative that teachers be formally and adequately trained in handwriting instruction, and also in corrective measures pertaining to handwriting. Proper training paired with an effective pre-handwriting programme should not only limit, but in some instances even eradicate, challenges in handwriting for the young learner.

The following pre-handwriting components were identified in Chapter 1: postural stability, fine motor skills, pencil grip, kinaesthesia (pencil pressure), and visual motor integration (Banumathe *et al.*, 2016: 20). The results from the focus group discussions correspond with these; and added spatial orientation, midline crossing, furniture size, low muscle tone, eye-hand coordination and wrist movement. I am, therefore, satisfied that the gaps in the literature have been filled.

6.3 Limitations

This research project was conducted at three urban schools in the Capricorn district, where funding is not necessarily problematic. Ten teachers took part in this project. The results of this small sample should be considered with care before generalising the findings to suburban schools. It would be wise to bear in mind that, should a pre-handwriting programme be compiled, it should consider the particular limitations of, for instance, suburban schools, and non-fee paying schools where the financial impact could be severe.

6.4 Recommendation

My recommendation is that a pre-handwriting programme be compiled with daily activities and duration stipulated, for use in the Foundation Phase classroom. This programme should include the perceptual fundamentals explored in this research project and stipulated in the literature consulted in the course of this research project. An instructional guide or manual for teaching handwriting should be included in such a programme, with assessment guidelines that are

appropriate for learners in the age group that currently enrol for formal schooling in South African schools.

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APPENDIX 1



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PARTICIPANT INFORMATION AND CONSENT FORM

I herewith wish to request your consent to participate in this research, which involves Grade 1 learners from primary schools. Before you give consent, please acquaint yourself with the information below.

The details of the research are as follows:

TITLE OF THE RESEARCH PROJECT:

Grade 1 teacher's experiences of learners' pre-handwriting challenges

PROJECT SUPERVISOR: Dr L.D. Preston

CO-SUPERVISOR: Ms W. van der Merwe

ADDRESS: Faculty Education Sciences

School of Education

Educational Psychology

NWU, Potchefstroom Campus

CONTACT NUMBER: 018 299 4765

MEMBER OF PROJECT TEAM MEd-Student: Mrs René Annandale

ADDRESS: 13 Wilge Street, Flora Park, Polokwane, 0699

CONTACT NUMBER: 0741559397

This study has been approved by the Ethics committee of the Faculty of Education Sciences of the North-West University and will be conducted according to the ethical guidelines of this

committee. Permission was also asked from the Department of Basic Education as well as the school principal.

What is this research about?

The aims of this research to:

- explore the Grade 1 learner's pre-handwriting challenges,
- explore the experiences of Grade 1 teachers regarding these pre-writing challenges

Participants

- Grade One learners from three urban schools.

What is expected of you as participant?

The Grade 1 teacher will observe learners in her own classroom for a period of three weeks, between 29 January 2018 and 28 February 2018. She will identify learners experiencing difficulties with pre-handwriting skills. She will implement strategies to support the identified learners. The process of identification and support will be reported to the researcher during a focus group interview, where all the participating Grade 1 teachers will be present.

The teacher will be required to supply evidence of the learners' work, as well as photographs of assistive strategies implemented, e.g. where the learners are doing a specific exercise that you believe would assist them in overcoming difficulties with pre-handwriting.

Benefits to you as participant

It is believed that the teachers as participants will benefit by being more aware of assistive strategies they can implement to support the learners. The grade one learners involved will benefit from the best possible strategies to support them in developing their pre-handwriting skills.

The researcher is willing to be available for advice throughout the process.

Risks involved for participants

No risks involved. Teaching and learning should continue as usual, with no special emphasis on the research project.

Confidentiality and protection of identity

The researcher undertakes to not disclose any harmful or embarrassing information of any participant and participants' views will remain anonymous as far as possible within the focus group. Individual interviews with teachers will be allocated with numbers to ensure confidentiality and privacy.

Dissemination of findings

Transcripts of focus group interviews with teachers will be shared with them to be checked for accuracy.

Once the data have been analysed and interpreted an open invitation will be extended to all Grade 1 teachers of the participating schools, school principals, head of departments and parents of learners that participated in the project, to share the outcome with them.

If you have any further questions or enquiries regarding your participation in this research, please contact the researchers for more information.

DECLARATION BY PARTICIPANT:

By signing below, I _____ parent/guardian of (child's name) _____, attending (school) _____ agree for my grade one child to take part in a research study entitled:

Grade 1 teacher's experiences of learners' pre-handwriting challenges

I declare that:

- I have read this information and consent form and understand what is expected of me in the research.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the research process before it has finished, if the researcher feels it is in my best interests, or if I do not follow the research procedures, as agreed to.

Signed at Polokwane on (date) _____/_____/2018

Signature of participant's parent/guardian

Signature of witness

APPENDIX 2

After making a careful study of Nieuwenhuis (in Maree, 2016: 96), I went to great lengths and expense to make the teachers feel welcome and to put them at ease. For the focus group discussions to be as rich in data as possible, I had to initiate the conversation, and remain in the background as much as possible in order for the participants to interact. I did, however, ask direct questions when I needed clarification on what a participant had said.

Questions posed to the teachers as participants during the focus group discussions.

The opening question at both focus group discussions was:

“What are your experiences of learners’ pre-handwriting challenges. Let’s start with before you even start teaching a formal handwriting lesson. What did you observe? What did they struggle with?”

The only other direct question was:

“Ladies, in closing, may I ask a direct question? Have you received training at tertiary level in how to present a handwriting lesson?”

Questions asked for clarification purposes were:

“And did you use clay perhaps as a medium?”

“Tell me, after building something on the pegboard, do you allow them to turn the pegboard over to put the pegs back into the container?”

“Let’s go back to that one. What did you do to try and improve his muscle tone and was that successful?”

“Oh the roll-ups. Twisters. Okay.”

“Would you say a triangular pencil contributes more to the children’s success?”

“You mean, after all this you have not been successful.”

“Meaning a short course?”

Which one is that, Ma’am?

Questions that encouraged participation were:

“Would you like to add anything, anyone?”

“You mentioned the pencil grip.”



Faculty of Education: R&I - M&D Administration

MINUTES

Meeting: Research Ethics Committee of the Faculty of Education

Date of meeting: 1 March 2018

Time of meeting 9:00

Meeting room: Building C6, room 299E

ITEM	
1.1 Sake uit die vorige notules / Matters arising from the minutes	
<p>Etiekaansoek NWU-00202-18-S2 uit vergadering van 30 November 2017: Dr L Preston en MEd-student, R Annandale / Ethics application NWU-00202-18-S2 of meeting of 30 November 2017: Dr L Preston and MEd student, R Annandale.</p> <p>Prof Olivier en die verantwoordelike lede van die komitee (prof J de Beer en dr B Challens) het die gewysigde aansoek ontvang. Hulle is tevrede met die wysigings en beveel aan dat daar magtiging verleen word. / <i>Prof Olivier and the responsible members of the committee (Prof J de Beer and Dr B Challens) received the amended application. They are satisfied with the changes made and recommend that authority is granted.</i></p> <p>Die komitee bekragtig die besluit. / The committee ratifies the decision.</p>	

Notulehouer / Minute keeper: Me/Ms E Greyling