



People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
Dr. Moulay Tahar University, Saida
Faculty of Letters, Languages and Arts
Department of English Language and Literature

**Teaching Handwriting to Beginners:
Difficulties and Solutions: A Case Study of Third Year
Pupils at
“Thabeti Senoussi” and “Cherifi Mostefa” Primary
Schools**

Dissertation submitted in partial fulfilment of the requirements for the degree of
Master in Didactics

Presented by:

Khadidja Amina CHABANI

Supervised by:

Dr. Mokhtaria KHERRAZ

Board of Examiners

Dr. Miloud FEKIH	(MCA)	Chair Person	University of Saida
Dr. Mokhtaria KHERRAZ	(MCA)	Supervisor	University of Saida
Prof. Hichem GHEMBAZA	(Prof)	Examiner	University of Saida

Academic Year: 2025/2026

Dedication

To My Mother

To the backbone of my life ,who made it possible for me to succeed because of her eternal love,prayers and sacrifices that brought me up .Everything that I am today and everything that I have achieved has been possible only because of you; Mum! .

To my dear Father ,my uncle and my brother Younes

this project is my way of acknowledging your presence in my life and showing you my utmost respect.

To My Beloved Hichem

To my husband, Hichem, who is the greatest source of strength for me; thank you for staying with me all along this journey and believing in my capabilities when the road got tough and exhausting.

To My Beloved Son, Imad Eddine and my daughter Amira

To my little son, Imad Eddine, and my daughter Amira whom I dedicate this research with all the love in my heart as they have been my constant inspiration in pursuing my dreams and goals.

To My Cherished Families, Chabani & Adel

To my beloved families, Chabani & Adel, for having always been my shelter of safety, providing me with continuous support and encouraging me to pursue my academic goals.

To My Dearest Soul Mate and Sister, Marwa

To my sister and my soul, Marwa, whom I dedicate this journey with all the love in my heart as she was my source of motivation and encouragement throughout this academic career.

My self because if I didn't have this power I would never finish this work.

Acknowledgements

First and foremost, all glory goes to Allah, the Almighty for having given me good health, strength, patience, and will to complete this research.

I, Khadidja Amina CHABANI, hereby express a deep sense of gratitude to my revered supervisor Dr. Mokhtaria KHERRAZ for the guidance she has provided, the helpful suggestions she has offered, and above all, for her remarkable patience throughout the supervision of this research work.

Sincere thanks are also addressed to the honorable members of the examination committee: Dr. Miloud FEKIH, who kindly accepted to chair this dissertation defense, and Prof. Hichem GHEMBAZA, who agreed to serve as examiner. Their time, expertise, and valuable feedback are greatly appreciated.

Gratitude is also due to my respected fellow classmates for being there with friendship and pleasant memories.

In particular, I wish to thank the primary schools that facilitated the conducting of this research, namely, Thabeti Senoussi Primary School, Moulay El Arbi, and Cherifi Mostefa Primary School, Es-Sefala.

A special thank goes to the administration, teachers, and most importantly, the children for their cooperation in this study.

Abstract

Handwriting is one of the fundamental skills acquired during the primary years of education. It serves as the primary means of academic communication and reflects the cognitive and physical development of the learner. However, learning to write in English proves to be a significant challenge for many pupils in Algerian primary schools, particularly at the third-year level. This study investigates the difficulties encountered in teaching English handwriting to third-year primary school pupils in Saida, Algeria, with a focus on identifying their underlying causes — whether physiological, environmental, or institutional — and proposing effective pedagogical solutions. A descriptive-analytical research design was adopted, combining both qualitative and quantitative approaches. Data were collected from a sample of 10 teachers and 10 parents through structured questionnaires, supplemented by a semi-structured interview conducted with 4 teachers and direct classroom observation of 20 third-year pupils across two primary schools in Saida: Thabeti Senoussi and Cherifi Mostefa. The findings revealed that handwriting difficulties are widespread among the sample and are primarily attributed to overcrowded classrooms, lack of teacher training in graphomotor instruction, insufficient home practice, and limited motor security among pupils. Two key phenomena were identified: the "Ruler Effect," whereby pupils rely on rulers to form letters, and the "Speed Race," whereby pupils prioritize speed over legibility. Based on these results, a set of pedagogical recommendations is proposed for educational authorities, teachers, and parents, including the adoption of multi-sensory techniques, the Slow-Writing Challenge, and ergonomic instruction.

Keywords: Handwriting, Primary Schools, third year Pupils, difficulties, pedagogical strategies

TABLES OF CONTENTS

Dedications.....	I
Acknowledgments.....	II
Abstract.....	III
Table of Content.....	V
List of Tables.....	VI
List of Figures.....	VII
List of Acronyms	VIII
General Introduction	1
Chapter One: Literature Review — Teaching Handwriting: Difficulties And Solutions	3
1.1. Introduction.....	5
1.2 Definition of Handwriting	5
1.3. The Importance of Handwriting in Primary education.....	8
1.4 Characteristics of Third-Year Primary School Pupils	11
1.4.1 Cognitive Characteristics.....	12
1.4.2 Motor Development	13
1.4.3 Socio-Emotional Characteristics	13
1.4.4 Individual Differences	14
1.5 Handwriting Difficulties.....	15
1.5.1 Types of Handwriting Difficulties	15
1.5.2 Motor-Related Difficulties.....	16
1.5.3 Cognitive Difficulties	17
1.5.4 Perceptual Difficulties	17
1.5.5 Effects of Handwriting Difficulties on Learning.....	18
1.6. Factors Affecting Handwriting Learning.....	19
1.6.1 Pupil Factors: The Biological and Cognitive Blueprint.....	20
1.6.2 Teacher and Environmental Factors: The Pedagogical Atmosphere.....	22
1.6.3. The Home Environment and Early Exposure	23
1.7 Role of the Teacher in Teaching Handwriting.....	23
1.8 Role of the Learner in Learning Handwriting	25
1.9 conclusion.....	28
Chapter Two	29
Data Analyses and Interpretations	29

2.1. Introduction.....	31
2.2. Research Design.....	31
2.3. Population and sampling.....	31
2.4. Research instruments	32
2.5. Data Collection Procedures.....	33
2.6. Data Analysis and Interpretation.....	33
2.7 Conclusion	64
Chapter Three.....	66
Suggestions and Recommendations.....	66
3.1. Introduction.....	68
3.2. Discussion of Results in Light of the Hypotheses	68
3.3. Pedagogical Implications	70
3.4. Recommendation 1: Improving the Classroom Environment and Physical Health	71
3.5. Recommendation 2: Integrating Technology in Modern Pedagogy	72
3.6. Recommendation 3: Suggested Instructional Strategies.....	72
3.7. Recommendation 4: Multi-Sensory Techniques for Motor Security	72
3.8. Recommendation 5: Ergonomic Instruction	72
3.9. Recommendation 6: Guided Practice & Feedback Loop.....	73
3.10. Overcoming the "Speed Race" Strategy	73
3.11. Summary Table of Techniques	74
3.12. Recommendations to Authorities, Teachers, and Parents	75
3.13. Limitations of the Study.....	77
3.14. Conclusion	77
General Conclusion.....	79
Bibliography	82
Appendices.....	86
Acronyms.....	I

List of tables

Table 1: Summary of Handwriting Difficulties and Their Underlying Causes	19
Table 2.1: Gender Distribution	34
Table 2.2: Teachers' Years of Experience	35
Table2.3: Academic Qualification.....	37
Table2.4: Teachers' Training	38
Table 2.5: Pupils' Handwriting Difficulties	39
Table 2.6: Common Handwriting Difficulties	40
Table 2.7: Effect of Class Size on Teaching	41
Table2.8 : Stategies to Overcome Handwriting Difficulties	42
Table2.9: Techniques for improving Handwriting	43
Table2.10:Technology impact.....	44
Table2.11:Parents support	45
Table2,12:Use of special Techniques	46
Table2.13: Parents' Gender Distribution.....	48
Table2.14: Parents' Relationship to the Child.....	49
Table2.15: Parents' Educational Level.....	50
Table2.16: Pupils' Handwriting Level	51
Table2.17: Pupils' Handwriting Difficulties	52
Table 2.18: Types of Difficulties.....	53
Table2.19: Pupils' Complaints about Writing	54
Table 2.20: Practice Frequency	55
Table2.21:Practice time.....	56
Table2.22: Parents' Help in Handwriting Practice	57
Table2.23; School Support for Handwriting	58
Table2.24: Importance of Handwriting	59
Table2.25: Impact of Technology on Handwriting	60

List of Figures

Figure2.1: Gender Distribution of teachers	34
Figure 2.2: Teachers' Years of Experience	35
Figure2.3: Academic Qualification	37
Figure2.4: Teachers' Training	38
Figure 2.5: Pupils' Handwriting Difficulties.....	39
Figure 2.6: Common Handwriting Difficulties	40
Figure 2.7: Effect of Class Size on Teaching	41
Figure2.8 :Strategies to Overcome Handwriting Difficulties	42
Figure2.9 :Handwritig improvement Techniques	43
Figure2.10:Technology impact	45
Figure2.11:Parents support	46
Figure2.12: Use of special Techniques	47
Figure2.13: Parents' Gender Distribution	48
Figure2.14: Parents' Relationship to the Child	49
Figure2.15: Parents' Educational Level	50
Figure2.16:: Pupils' Handwriting Level.....	51
Figure2.17: Pupils' Handwriting Difficulties.....	52
Figure2.18: Types of Handwriting Difficulties	53
Figure2.19: Pupils' Complaints about Writing	54
Figure2.20: Handwriting Practice at Home	55
Figure2.21: Time Spent on Handwriting Practice.....	56
Figure2.22: Parents' Help in Handwriting Practice	57
Figure2.23: School Support for Handwriting	58
Figure2.24: Importance of Handwriting	59
Figure2.25: Impact of Technology on Handwriting.....	60

Acronyms

Acronyms

EFL:English as a Foreign Language,

UNESCO:United Nations Educational, Scientific and Cultural Organization

NHA:National Handwriting Association

RTL: Right to Left

LTR: Left to Right

HPSQ: Handwriting Proficiency Screening Questionnaire

MNE: Ministry of National Education

NHA: National Handwriting Association

General Introduction

Education is one of the most strategic pillars of any society, playing a crucial role in shaping its other developmental fields. It is for this reason that continuous research is conducted in order to improve the teaching and learning process. Indeed, teaching in elementary schools for instance is basically grounded on acquiring basic skills. Among these latter, handwriting forms one of the key objectives of primary education in the world.

In our country, teaching handwriting to third year pupils in primary school marks an important period because they transition from basic letter formation to more advanced English handwriting skills. It is worth clarifying that the handwriting addressed in this study refers specifically to Latin script as used in the English language, which presents additional challenges for Algerian pupils already accustomed to Arabic script. Handwriting cannot be reduced to a mechanical activity; it is a multifaceted process that requires the coordination of fine motor skills, cognitive engagement, and effective pedagogical interaction.

Nevertheless, it is often noticed that pupils face some difficulties with legibility and speed. This study attempts to highlight this problem and tries to seek for effective solutions. For this sake the following research questions have been suggested:

1. What are the most common handwriting difficulties faced by third-year primary school pupils in Saida?
2. To what extent do institutional factors, such as class sizes and teacher training, affect pupils' writing quality?
3. What are the most effective pedagogical strategies and tools that may help teachers and pupils overcome these handwriting obstacles?

In accordance with the research questions, the following hypotheses have been formed:

- Handwriting, as a complex psychomotor skill, is difficult both to teach and to acquire; third-year primary school pupils in Saida are likely to encounter significant handwriting difficulties — whether physical, psychological, or pedagogical — given that English is introduced to them for the first time at this level..
- Environmental and institutional factors — such as overcrowded classrooms, insufficient teacher training, and the competitive "Speed Race" behavior observed among pupils — contribute significantly to the deterioration of handwriting quality in third-year primary school pupils in Saida.

- The implementation of specific pedagogical strategies — such as the "Slow-Writing Challenge," "Multi-Sensory Techniques," and adequate teacher training — can effectively help pupils overcome handwriting difficulties; however, improvement in pupils' handwriting performance depends on the consistent and proper application of these strategies within the classroom context.

From a methodological side, a descriptive approach has been adopted in order to have a clear view about the issue of teaching handwriting to third year primary school pupils and the difficulties they face. For data collection, both qualitative and quantitative methods are used which means mixed method. As for data collection instruments, three tools are used: a questionnaire, a semi-structured interview and a class observation.

The current study, consists of three chapters:

The first chapter constitutes the theoretical framework of this study. It opens with a definition of handwriting from various scholarly perspectives, establishing it as a complex skill that goes beyond the mere act of putting words on paper. It then addresses the importance of handwriting in primary education, followed by an overview of the characteristics of third-year primary school learners — including their cognitive, motor, socio-emotional, and individual dimensions. The chapter subsequently examines the main factors affecting handwriting acquisition and concludes by highlighting the respective roles of the teacher and the learner in the handwriting development process.

The second chapter is devoted to the empirical component of the study. It begins by presenting the research methodology, including the research design, population and sampling, data collection instruments, and analysis procedures. It then provides a detailed analysis and interpretation of the data collected through the teachers' questionnaire, the parents' questionnaire, the semi-structured interview conducted with four teachers, and the direct classroom observation carried out at the two target schools in Saida.

The third chapter presents a discussion of the findings in light of the research hypotheses, followed by a set of pedagogical implications and concrete recommendations addressed to educational authorities, teachers, and parents. It also proposes a range of instructional strategies — such as the Slow-Writing Challenge and Multi-Sensory Techniques — aimed at helping pupils overcome their handwriting difficulties. The chapter concludes with the study's limitations and directions for future research.

Chapter One: Literature
Review — Teaching
Handwriting: Difficulties
And Solutions

- I.1. Introduction
- 1.2 Definition of Handwriting
- I.3. The Importance of Handwriting in Primary education
- 1.4 Characteristics of Third-Year Primary School Pupils
 - 1.4.1 Cognitive Characteristics
 - 1.4.2 Motor Development
 - 1.4.3 Socio-Emotional Characteristics
 - 1.4.4 Individual Differences
- 1.5 Handwriting Difficulties
 - 1.5.1 Types of Handwriting Difficulties
 - 1.5.2 Motor-Related Difficulties
 - 1.5.3 Cognitive Difficulties
 - 1.5.4 Perceptual Difficulties
 - 1.5.5 Effects of Handwriting Difficulties on Learning
- 1.6. Factors Affecting Handwriting Learning
 - 1.6.1 Pupil Factors: The Biological and Cognitive Blueprint
 - 1.6.2 Teacher and Environmental Factors: The Pedagogical Atmosphere
 - 1.6.3. The Home Environment and Early Exposure
- 1.7 Role of the Teacher in Teaching Handwriting
- 1.8 Role of the Learner in Learning Handwriting
- 1.9 conclusion

1.1. Introduction

Primary education has been considered the foundation of the educational process, as this is the stage in which individuals acquire basic knowledge that will be useful to them in the future. It is at this level that pupils are exposed to essential skills such as reading, writing, and mathematics, which are considered the core of all subsequent academic development. Difficulty experienced at this stage can affect pupils in their future academic development.

Among the basic skills that individuals learn at the primary stage of their education, handwriting plays an important role. It is one of the first ways in which pupils express their ideas in written form. Chapter one Comprises a definition of handwriting from several scholars' perspectives.

The chapter further examines the importance of teaching handwriting from various scholarly perspectives, before turning to the characteristics of third-year primary learners across four dimensions: cognitive development, motor development, socio-emotional characteristics, and individual differences. It subsequently identifies the main factors affecting learners' handwriting acquisition and concludes by examining the respective roles of the teacher and the learner in the handwriting development process.

1.2 Definition of Handwriting

The definition of handwriting is usually understood to mean the manual task of putting pen to paper in order to write. However, it is more than just the process of putting down words on paper; rather, it is the coordination of many different aspects within oneself. As Graham & Weintraub (1996, p. 7) point out, handwriting is an “automatic process that requires the integration of sensory, motor, and cognitive skills for written language production.”

Consequently, Handwriting is viewed as one of the most important skills that pupils develop in the early years of schooling. It forms one of the major means through which pupils communicate their knowledge in written form. Handwriting is viewed as a critical means by which pupils use handwriting as a way to express their feelings, thoughts, and ideas form. This skill acts as a bridge between the internal mental world of the pupil and the external academic environment.

Handwriting, although seems to be an easy physical skill, is rather a complicated cognitive process that entails many cognitive functions. This activity is both neurological and muscular.

In order to write a coherent handwritten material, one needs to have a high degree of synchronization between the brain's decisions and hands' actions.

According to Steve Graham, a leading authority in literacy education, the definition of handwriting is “The production of letters and words by hand for the purpose of communication.”

(Graham, 1992, p. 4)

It is interesting to note that the definition of handwriting given in the text emphasizes the role of communication in handwriting and states that it is not just the formation of letters but also the communication of meaning. This means that handwriting enables pupils to express their thoughts in written form and convey meaning to other people who read it from this perspective handwriting is a functional tool that enables pupils to exhibit their competence and interact with the academic curriculum of the school .

Moreover, Rosenblum (2008) defines handwriting as a complex perceptual motor skill that requires the integration of visual and motor skills. This means that pupils should be able to visually recognize the letters interpreting their spatial characteristics, orientation, and proportions and also coordinate their motor skills to be able to reproduce them in their handwriting. This is known as "visual-motor integration." This process requires a very complex neurological pathway. Any problem in the coordinating of motor skills will definitely affect the quality of handwriting in pupils , resulting in issues such as reversal of letters or improper sizing.

In the same context, Berninger (2006) states that handwriting is very crucial in the development of literacy skills in pupils. She states that handwriting enables other language processes, such as reading, spelling, and composition, to develop in pupils. This is also known as the “transcription “phase of writing. Pupils who face problems in handwriting often spend most of their cognitive resources in forming letters and are not in a position to devote their resources to the generation of ideas. The fact that handwriting has not yet been "automated" creates what is known as "cognitive overload," where the brain of the child gets overloaded with the physical act, thus suppressing creative thinking (McCutchen, 1995). creativity handwriting is also seen as both a cognitive and physical activity. When it is examined as a cognitive activity, it is associated with memory, attention, and planning.

The pupils need to remember the shape of the letter (retrieval from long-term memory), pay attention to the activity, and also make sequential movements (executive motor

planning)..When it is examined as a physical activity, it is associated with fine motor actions, which include proper grip, wrist stability and hand-eye coordination. In addition to the above, it involves what experts refer to as "proprioception" — an internal awareness on the part of the pupil about hand positioning and the degree of pressure applied to the paper (Rosenblum, Weiss, & Parush, 2003).

It is also significant to differentiate between handwriting and writing. While handwriting is associated with the physical activity of writing and forming words and letters, writing is associated with generating ideas, organizing, and finally writing. In other words, handwriting is foundational sub-skill of writing. When pupils face problems in handwriting, it is likely to affect their writing performance, as it will be difficult for them to express themselves due to handwriting problems. If the mechanical tool is inefficient, the creative message remains trapped within the pupil's mind.

Furthermore, there is the identification of styles of handwriting, which include print handwriting and cursive handwriting. Print handwriting is where letters are written individually, while cursive handwriting is where letters flow into each other. Both styles have unique motor skills that have to be used in teaching, with some pupils finding it easier than others. In the Algerian educational system, cursive writing takes precedence since it is thought that this would facilitate the writing process among primary pupils.

Additionally, the significance of handwriting has been recognized as one of the fundamental academic skills that go beyond the mere act of writing. Indeed, the role of handwriting is critical in the performance of pupils in different school subjects, as they are required to perform the act of writing in almost every class activity. For instance, pupils are required to write their answers, take notes, and perform class activities in subjects such as language, mathematics, and science. As a result, if pupils experience difficulties in their handwriting, they are likely to be affected academically across all disciplines.

It is also worth noting that handwriting is not only restricted to the physical act of forming words, but it is also an essential aspect in facilitating pupils to communicate their ideas in an effective manner. It is in this respect that handwriting is considered an integral aspect of the process of communication in the classroom.

Writing is not a skill that can be mastered alone; it is an activity that contributes to the process of learning several disciplines. The above quote indicates the significance of handwriting in the

performance of pupils in different subjects. Indeed, the act of writing is not isolated, but rather one of the fundamental activities that support the learning of different subjects. As such, if pupils experience difficulties in their handwriting, they are likely to fail to express their knowledge, regardless of their understanding of the subject. This results in social discrimination where the cognitive ability of the pupils is evaluated based on their handwriting skills (Graham & Weintraub, 1996). As a result, the actual cognitive capability of the pupil will be distorted, causing them to feel demotivated and lack confidence. As a result, their performance may not reflect their true abilities.

Considering the above-mentioned points, handwriting can be defined as a complex and multi-dimensional skill that is of crucial importance in the academic lives of pupils. It involves the integration of cognitive, motor, and perceptual skills and is considered an essential tool of communication and learning in the classroom. Mastering this skill is therefore a prerequisite for a pupil's overall academic success.

1.3. The Importance of Handwriting in Primary education

The significance of writing well cannot be underestimated in primary education since it forms the basis for literacy and academic achievement. Many researchers suggest that the ability to write proficiently results in better composition skills and academic success (Berninger, Abbott, Abbott, Graham, & Richards, 2002). Writing helps reinforce what one has learned due to sensory stimulation. In addition, handwriting positively affects one's self-respect and identity. Particularly, the ability to write neatly plays an important role in early education and helps improve pupils' confidence level.

On the basis of all these psychological and educational factors, writing is perceived as a functional need regardless of any subject at school. For example, in a mathematics lesson, pupils are required to write numbers clearly. Poor handwriting may lead to confusion between numbers such as 1 and 7 or 3 and 8, which directly affects their answers. It is not merely a technical requirement but a foundational developmental milestone that bridges the gap between oral and written language. It plays a fundamental role in pupils' academic success, as it is the primary means through which they express their ideas, complete classroom tasks, and demonstrate their knowledge. Despite the increasing use of technology in education, handwriting remains a core component of the learning process, particularly at the primary stage. This endurance is due to the unique cognitive benefits of writing by hand, which have been shown to surpass those of digital typing in terms of information retention and neural

development.

One of the main reasons why handwriting is important lies in its strong relationship with academic achievement. Pupils are required to write in almost all school subjects, including language, mathematics, and science. They use handwriting to answer questions, copy lessons, and complete assignments. This pervasive use across the curriculum makes handwriting a "transcription" tool that underpins all other academic activities. Therefore, pupils with clear and legible handwriting are more likely to perform better academically, as their work can be easily understood and evaluated by teachers. Conversely, poor handwriting may lead to a "masking effect," whereby a pupil's true knowledge is hidden behind bad handwriting, resulting in their unjust assessment regarding their intellectual capabilities. In this context, McCarney et al. (2013) point out that "Handwriting is a fundamental academic skill that can influence pupils' performance in several school subjects" (p. 105).

This, in turn, suggests that handwriting has a direct bearing on the way in which pupils' knowledge is assessed. Teachers often unconsciously associate neat, legible handwriting with higher intelligence and better academic effort. It is possible for a pupil to comprehend what the teacher is teaching, but because of poor handwriting, they may fail to convey their ideas in an effective manner, thus leading to poor academic performance. This imbalance can result in a self-reinforcing cycle of academic failure, whereby the pupil's performance is constantly devalued because of mechanical limitations rather than mental ones.

Handwriting, besides playing a role in academic performance, also plays an important role in the development of literacy skills. According to Berninger (2006), handwriting is essential in the development of reading and spelling skills. When pupils are encouraged to write letters, they are able to remember them better, thus making reading and spelling easier. Research in neuroscience, such as the work by James and Engelhardt (2012), has revealed that the physical act of forming letters activates the "reading circuit" in the brain, creating stronger neural representations of letters than visual recognition or typing alone.

Concerning Algeria, various empirical studies in the field have underscored the incidence of handwriting problems among pupils enrolled in the primary level. For example, one study carried out in Batna (2017) indicated that there were many pupils at the first, second, and third years facing problems such as poor letter positioning and spacing without gender differences. Likewise, the study performed in Biskra (2026) found that repeated pupils tended to have

messy handwriting skills and letters that overlapped each other, hindering their academic assessment. Besides, an intervention strategy undertaken in Mostaganem (2025) with regard to third-year pupils suggested that pedagogic training had positively impacted their handwriting skills.

Handwriting is also essential in the development of written composition. According to Graham and Santangelo (2014), the quality of pupils' writing is directly proportional to the quality of their handwriting. Pupils who can write effortlessly can devote their attention to the generation of ideas, thus leading to better writing compositions. This state of "automaticity" is crucial; as noted by Jones and Christensen (1999), when pupils do not have to think about letter formation, they free up significant working memory resources for planning, vocabulary selection, and self-monitoring. Pupils who experience difficulties in handwriting can only concentrate on the writing of letters, thus failing to make meaningful texts. In these pupils, the physical action of writing acts as a "bottleneck," which blocks their creative thinking process.

Similarly, Rosenblum (2008) shows how handwriting is a complex perceptual-motor activity, and how it can affect a pupil's achievement if they experience difficulties with it, stating that "such difficulties can have a negative impact on a pupil's achievement" (p. 154).

Generally speaking, it can be said that the significance of handwriting in the learning process is undeniable. It is a multidimensional skill that combines vision, motor skills, and cognition, making it an important instrument for early cognitive mapping.

Another important aspect of handwriting is its impact on pupils' motivation and self-confidence.. Pupils who possess good handwriting habits often receive praise and recognition from their teachers. This, in turn, helps motivate pupils to participate more in classroom activities. Pride in "handwriting" can act as an excellent psychological motivation for pupils to become more involved with their schoolwork. On the other hand, pupils who possess bad handwriting habits often get frustrated and demotivated, especially if their work is difficult to read and is often criticized. This may result in demotivation and negativity towards writing tasks. Persistent criticism of a pupil's handwriting can lead to "writing avoidance," where the child develops a lasting aversion to any task involving a pen, further hindering their academic progress.

Moreover, handwriting is also associated with pupils' participation in class. Most classroom activities require pupils to respond in writing. This means that pupils who possess handwriting

difficulties may be reluctant to participate in class. The fear of being judged on their poor handwriting makes learners reluctant participants of the learning process, resulting in their social and educational isolation within the classroom environment.

It is also important to note that the significance of handwriting should be emphasized despite the rise of digital technologies. Although computers and tablets are becoming more popular in educational institutions, primary school students mostly depend on handwriting in their daily activities in class. Additionally, research shows that handwriting provides superior information processing and conceptualization when taking notes than typing on a computer. Therefore, during this phase of the learning process, it is critical for teachers to focus on teaching pupils how to write before exposing them to technological tools such as computers. Premature introduction of keyboarding to replace handwriting may have negative impacts on the development of brain literacy networks. Thus, at this stage of the learning process, it is important to develop the handwriting skills of the students before encouraging them to make use of digital technologies.

Therefore, it can be emphasized that the significance of handwriting lies in the academic performance of the pupils. The ability to write is not just one of the skills that the pupils need to master; it is one of the factors that determines the academic success of the pupils in the learning process. Ultimately, handwriting serves as the physical interface of learning, and its mastery is a prerequisite for full participation in the academic community.

1.4. Characteristics of Third-Year Primary School Pupils

Third-year primary school pupils, typically aged eight to nine, are at a critical developmental stage marked by growing cognitive abilities and motor coordination. This is when a pupil is advancing in the area of penmanship from writing letters to forming words and sentences in a more cohesive manner. The fine motor skills of the pupil at this age are beginning to mature but may still experience inconsistency in control and speed. They are also becoming more aware cognitively of spelling and sentence construction techniques. Building on these developmental foundations, The third-year primary school pupils represent an essential stage in the learning process because they are expected to have consolidated their basic learning skills such as reading, writing, and arithmetic.

At this stage, the pupils are neither new to the process, nor have they fully grasped the basic learning skills. This period is often described by developmental psychologists as a "transitional

phase," where the emphasis shifts from "learning to write" to "writing to learn." Their characteristics have a direct bearing on their learning process of handwriting, including the challenges they may experience. It is important for teachers to understand these milestones because it helps them to plan instruction that will suit the pupil's developmental stage.

To comprehend the learning process of the pupils, it is imperative to consider their characteristics cognitively, physically, and socio-emotionally. The above-mentioned areas cannot be separated from each other; for example, physical inability in fine motor coordination can cause mental fatigue and emotional frustration.

These characteristics, therefore, show that the development of handwriting is closely related to the pupils' developmental process. At this stage, pupils are still developing the appropriate cognitive and motor skills that are required for proper handwriting. Therefore, if pupils are not well equipped with the appropriate motor and cognitive skills, they may find it hard to do their classwork properly. and may fall behind their peers in the overall academic competition.

1.4.1 Cognitive Characteristics

At this level, pupils exhibit developmental improvements in their cognitive abilities . This is characterized by improvements in their attention, memory, and problem-solving skills. However, their attention span is still restricted, especially when undertaking tasks that demand sustained mental effort and high precision, such as The same can be attributed to cognitive psychology, where this phenomenon can be correlated with the fact that there is only so much capacity available within the "Working Memory" of such individuals to process several sub-tasks at once.

It is challenging for pupils to concentrate over long periods, and this affects the quality of their handwriting. To exemplify, pupils may commence their handwriting task attentively but eventually lose concentration, leading to messy handwriting and irregular spacing between words. This demonstrates that handwriting is not only a motor skill but also involves cognitive processes that demand metacognitive concentration. The mental fatigue resulting from the effort to maintain legibility often leads to a decline in the quality of the content they produce.

Further, pupils in this stage are still in the developmental stages of learning to plan and organize their activities. To be able to write, they should be able to plan and organize their activities cognitively. This involves simultaneously thinking of letter formation, spacing, and alignment, which is cognitively demanding. This "simultaneous processing" is a hallmark of

the third-year challenge. As such, pupils in this level may not be able to coordinate their activities effectively. without explicit pedagogical scaffolding from the teacher.

1.4.2 Motor Development

Handwriting is greatly affected by the motor development of pupils, especially their fine motor skills. Primary learners in their third year are still in the developmental stages of motor skills, especially fine motor skills, which involve the movement of small muscles in the hand and fingers. The development process referred to as "distal control" entails pupils having the capability of using their fingers and wrists to write scripts rather than their entire arms.

During this stage of development, learners experience an advancement from Gross Motor Control (shoulder and elbow motion) to Fine Motor Control (motion of intrinsic muscles of hands and fingers). An illustration can be taken from the process of learning how to write; an unskilled writer will use arm movement to make letters, creating wide and wiggly marks which go beyond the lines. As 'distal control' becomes more developed, the pupil masters the skill of fixing the wrist while moving fingers only in a tripod position.

According to educational research, fine motor skills are important in the formation of accurate and legible handwriting. Pupils who have good motor skills can easily hold the pencil using a functional "tripod grip" and apply the right pressure to form accurate letters. On the other hand, those who lack motor skills may face challenges in their handwriting, such as shaky handwriting, irregular letter size, and slow handwriting speed. This usually happens due to "muscle fatigue" or bad "proprioceptive feedback," whereby the child cannot detect the right amount of tension required for the proper manipulation of the pen.

Another aspect of motor skills that affect handwriting is hand-eye coordination, whereby pupils should be able to coordinate their eyes with their hand movements in order to form letters correctly. This visual-motor integration is the basis for maintaining the "baseline" on the paper and ensuring consistent letter slant. Any weakness in hand-eye coordination may cause pupils to form letters of poor shape and find it difficult to place them in the right position on the piece of paper. Thus, motor skills represent a physical prerequisite that affects pupils' handwriting performance.

1.4.3 Socio-Emotional Characteristics

Socio-emotional characteristics also play an important role in pupils' learning, including handwriting. At this stage, pupils are very sensitive to feedback from teachers and peers. They are creating their "academic self-concept," in which their feeling of competence is associated with the tangible items they produce, like their notebooks. Positive feedback will increase pupils' self-confidence and motivate them to develop and enhance their handwriting skills.

However, if pupils receive constant criticism and negative feedback, it may result in feelings of frustration and low self-confidence. Pupils who face repeated failure in handwriting may develop a negative attitude towards handwriting and try to avoid it at all costs, a behavior known as "task avoidance. Pupils' motivation is also an important factor in developing handwriting. Pupils who are motivated and interested in learning will be motivated to practice handwriting. On the contrary, if pupils are not motivated, it will result in poor handwriting development.

Moreover, pupils may also be influenced by comparing themselves with others. Pupils often compare their handwriting with that of other pupils. This "social comparison" is especially common in the third year when pupils become more conscious about social status differences. Pupils who think that their handwriting is worse compared to that of other pupils may develop feelings of discouragement and inferiority, which can stifle their willingness to share their written work in class.

1.4.4 Individual Differences

It is essential to recognize that pupils in this stage exhibit significant individual differences in their learning and developmental capabilities. This is often referred to as "developmental diversity." Some pupils might be quick in learning handwriting skills quickly, while others might not be as quick in learning and might need more time and support in their learning process. These individuals referred to as "late bloomers" are known to be highly intelligent but encounter difficulties in performing the mechanical processes involved in writing.

These differences could be related to cognitive, motor, and learning differences, as well as differences in early childhood exposure and in opportunities to practice their handwriting skills. Teachers should be sensitive to these differences and make the necessary adaptations in their teaching strategies accordingly. utilizing "differentiated instruction" to accommodate various skill levels. Recognising individual differences is essential in creating a conducive learning environment where all pupils are given equal opportunities to develop their

handwriting skills. without fear of judgment or marginalization.

1.5 Handwriting Difficulties

Challenges associated with handwriting could be attributed to any of these aspects of cognition, movement, perception, and emotions. In the case of dysgraphia, the condition refers to an impairment of the neurological system which results in problems with fluent, clear handwriting. The common indications include varying letter sizes, improper spacing, inability to write fast, and many reversals. Some emotions, such as frustration or low self-confidence, may compound these challenges. Early identification is essential for appropriate interventions.

Handwriting difficulties are one of the most common difficulties that primary school pupils experience, especially during the initial stages of learning. These impairments in handwriting, often referred to in clinical terms as "dysgraphia" or "transcription deficits," Handwriting difficulties can greatly impact the academic performance of the pupils since they are required in all school activities. Pupils experiencing difficulties in handwriting may find it hard to express themselves and participate in class activities accordingly.

This presents a major hurdle for their academic performance because their written work does not truly represent their intellectual capacity and subject understanding. Research indicates that difficulties in handwriting do not come about because of one factor. Rather, they come about because of the integration of various neurological, biomechanical, and pedagogical difficulties. The difficulties in handwriting may take various forms and differ in various pupils. reflecting the unique developmental profile of each learner.

1.5.1 Types of Handwriting Difficulties

There are various types of handwriting difficulties, depending on the nature of the problem. One of the common types of handwriting difficulty experienced by pupils is poor letter formation. In this type of difficulty, pupils are unable to form letters properly. The letters may look distorted, incomplete, or irregular. This problem frequently arises due to the absence of a "letter schema," which means that the pupils has not yet learned mentally how to build each letter For example, a pupil may write the letter “a” in different shapes each time or fail to close the loop properly. In other cases, letters such as “m” and “n” may appear identical, which affects

readability. This inconsistency shows that the pupil has not yet developed a stable mental representation of letter forms.

Another frequent issue is irregular spacing between letters and words. Pupils may write words that are too close or too far from each other. Such writing may not be very readable. In addition, pupils may also experience difficulty in writing and aligning their writing. Some pupils may write above or below the line. The failure to observe the “baseline” usually points to an issue with visual spatial skills and horizontal-vertical discrimination. For instance, a pupil may write “mybook” instead of “my book” or leave large gaps such as “m y b o o k,” which disrupts the visual organization of the sentence. This problem is often linked to weak spatial awareness and poor visual planning.

Slow writing speed is also a major difficulty. Pupils who write slowly may not be able to finish writing within the required time. This "fluency deficit" means that even if the handwriting is legible, the rate of production is insufficient for classroom demands. Such pupils may not perform well in class and even in exams. because they cannot keep up with the pace of instruction. For example, during a classroom activity, a pupil may still be copying the first sentence while others have already completed the task. This delay may lead to frustration and anxiety, especially during exams where time is limited.

Finally, another type of difficulty experienced by pupils in writing is illegible writing. When pupils write illegibly, teachers may not be able to assess their work, even if the work is correct. This results in a breakdown of the teacher-pupil communication process, in which the pupil's knowledge is inaccessible to the evaluator.

In some cases, even correct answers may be marked as wrong simply because the handwriting is unreadable. This creates what is known as a “communication breakdown” between the pupil and the teacher.

1.5.2 Motor-Related Difficulties

Handwriting problems are also related to motor development, especially fine motor development. Pupils who do not have good motor control of their hands may experience problems with their handwriting. It entails “proximal” and “distal” muscle control; pupils have to be able to stabilize the shoulder and elbow joint while using the fingers for fine motor actions.

According to Maeland (1992) and Smits-Engelsman Engelsman, Niemeijer, and Galen

(2001), pupils who experience problems with their handwriting tend to experience motor difficulties.

This makes them unable to write letters correctly. They may press the pencil too hard or too lightly, which makes their writing unclear. This is known as a "graphomotor" problem, where the pupil struggles to regulate the "grip force" and "point pressure" required for fluid writing.

Another motor-related difficulty is the difficulty pupils experience in hand-eye coordination.

This may cause pupils to draw letters incorrectly. This leads to the inconsistent size of the letters. Also, some pupils might suffer from "motor fatigue," which results from bad ergonomics or an ineffective pencil grip.

This physical exhaustion, especially if the task is too long, affects the quality of their handwriting as the hand muscles become tired and movements become less controlled.

1.5.3.Cognitive Difficulties

Handwriting also involves other significant cognitive abilities like attention, memory, and planning. Pupils who face difficulties in maintaining attention may also face problems in handwriting. According to Graham, Harris, and Fink (1997), pupils who face difficulties in handwriting tend to concentrate most of their attention on mechanical writing rather than on the content. This means that their "Executive Functions" are entirely occupied by letter formation. This affects pupils in generating and organizing their ideas.

Memory is also significant in handwriting. Pupils need to remember the shape of letters and patterns. Pupils who face difficulties in memory may face problems in remembering the shape of letters, thus affecting fluency in writing.

McCutchen (1995) states that "if pupils cannot perform handwriting automatically, it affects their writing as it becomes cognitively demanding" p. 253). When automaticity is absent, the "Working Memory" becomes a bottleneck, preventing higher-order thinking.

1.5.4.Perceptual Difficulties

Pupils' perceptual skills, especially visual perception, play an important role in handwriting development. Pupils should be able to recognize the visual form of letters and differentiate between similar letters (such as 'b' and 'd' or 'p' and 'q').

According to Tseng and Murray (1994), visual-motor integration is crucial in handwriting development. It is the connection between visual and motor skills, which enables pupils to react to visual input through hand movements. However, visual-motor problems may cause illegible handwriting and irregularities in handwriting style. One more feature of perceptual problems is visual perception, which, as noted by Weintraub and Graham (2000), might bring about spacing, alignment, and letter-size issues because the pupil is unable to determine the "depth" and "width" of the writing area. Another aspect of perceptual difficulties is visual perception, which, according to Weintraub and Graham (2000), may cause problems in spacing, alignment, and letter size.

1.5.5.Effects of Handwriting Difficulties on Learning

Handwriting difficulties may have serious effects on the learning process of the pupil. One of the effects is the impact it has on the academic performance of the pupil. The pupil may be unable to complete his or her assignments. This may affect the academic performance of the pupil. This leads to "chronic academic underachievement," where the pupil's grades consistently fall below their true potential.

In addition, these difficulties may affect pupils' motivation. Pupils who experience challenges in handwriting may develop a negative feeling towards their work, especially if they do not see any improvements in their handwriting despite their efforts. This usually results in "learned helplessness," whereby the pupil ceases to make efforts since he or she believes that failure is unavoidable.

Furthermore, handwriting difficulties may limit pupils' classroom participation. Pupils may avoid writing tasks or participate less in activities that require written responses.

"Students who experience difficulties in handwriting may avoid writing and develop low self-confidence." (Graham, 1992, p. 2) This highlights the emotional impact of handwriting difficulties on pupils.

"Considering the various forms of dysgraphia and transcription problems discussed above, it becomes imperative to classify them based on their developmental basis. Below is a summary (Table 01) of the correlation between the observed handwriting problems and their underlying psychological or physiological cause:"

Table 01: Summary of Handwriting Difficulties and Their Underlying Causes

Handwriting difficulty	Possible underlying causes
Poor Letter Formation (Distorted or incomplete letters)	Lack of motor memory (letter schema) and poor fine motor control.
Irregular Spacing (Words too close or too far)	Weak visual-spatial perception and difficulty in planning spatial orientation.
Poor Alignment (Writing above or below the line)	Deficit in visual-motor integration and inability to maintain the baseline.
Slow Writing Speed (Fluency deficit)	Lack of automaticity in letter formation and excessive cognitive load.
Heavy or Light Pressure (Inconsistent line quality)	Issues with proprioception (awareness of hand position) and poor pencil grip.
Letter Reversals (e.g., b/d, p/q confusion)	Immature visual discrimination and spatial orientation skills.

1.6. Factors Affecting Handwriting Learning

The acquisition of handwriting skills is influenced by a constellation of factors that interact dynamically. Understanding these variables equips educators to tailor instruction that addresses individual needs and maximizes learning outcomes. These influences are seldom isolated; rather, they interact in a complex manner to shape the pupil's developing script. The following table summarizes the primary factors that dictate the quality of handwriting acquisition:

Factor	Description
Neuromotor Development	The maturation of fine motor control and coordination essential for precise letter formation.
Visual-Motor Integration	The ability to coordinate visual perception with motor output, critical for spatial arrangement.
Cognitive Skills	Language processing, memory, and attention that enable understanding of shapes and spelling.
Environmental Support	Quality of instruction, classroom resources, and exposure to consistent handwriting practice.
Emotional & Motivational	Pupils' confidence, anxiety levels, and interest in handwriting tasks.
Ergonomics	Proper posture, pencil grip, and writing tools facilitating comfort and efficiency.

These factors can be grouped into pupil, teacher, and environmental categories. This process is often described as “Triadic Reciprocity,” whereby the physical condition of the pupil, the instructional skill of the teacher, and the physical limitations of the learning environment combine to form the ultimate product on paper.

1.6.1.Pupil Factors: The Biological and Cognitive Blueprint

Initially, the pupil has his or her own pace of learning, which is often dictated by their unique developmental timeline. It is also possible that the pupils may not be equal in the sense that they may be either better or worse in terms of physical skills. For issues, the pupil may possess superior fine motor coordination and dexterity, which encourages them to write well and swiftly, while another pupil may not have developed the same level of neuromuscular control. Biological differences indicate that teaching pupils how to write must not take a “one-size-fits-

all” approach, as each pupil is at a different stage of physical readiness (Berninger et al., 2002). In the specific context of Algerian primary education, , the biological factor is accompanied by an additional "Directional and Stylistic Dualism." Third year pupil experiences what may be referred to as a "Directional Conflict," as he is required to make a transition from the RTL direction of Arabic to the LTR direction of French. Notably, this process involves more than mere physical adaptation; it represents "Cognitive Re-orientation" those challenges working memory capacity. "Proactive Interference" takes place when well-established motor memory pertaining to Arabic stroke-writing interferes with the learning process of French cursive writing. This results in what may be called "Graphic Negotiation," which entails switching between two entirely different motor experiences: curving, flowing writing style of Arabic vs. slant and "Seyes" of French handwriting. "Visual-Spatial Overload" may result from such a process of adaptation, causing difficulties in terms of hand-eye coordination for each individual lesson, which often ends up in "Mirror Writing" or inconsistency in letter slants when writing in French.

Source: Compiled by the researcher based on Graham and Weintraub (1996), Berninger et al. (2002), and Rosenblum, Weiss, and Parush (2003).

Secondly, another factor that affects the learning of handwriting among the pupils is the level of practice and repetition . For instance , a pupil who practices regularly may be better than one who occasionally works . on their letter formation. In pedagogical terms, handwriting is a "motor habit" that requires consistent reinforcement to reach the stage of permanent storage in the long-term memory (Ericsson, Krampe, & Tesch-Römer, 1993). This is scientifically known as "Myelination," where repeated correct movements strengthen the neural pathways in the brain, making the action smoother over time. On the other hand, a pupil who does not practice systematically well may be poor in handwriting exhibiting inconsistent letter sizing and the spacing of the letters. Without sufficient "distributed practice," the pupil's handwriting fails to become a fluent and effortless skill .

Another factor that could influence the learning of handwriting is the pupils' focus on speed as opposed to quality. In most primary schools, some pupils have the tendency to hurry and finish their work as quickly as possible, regardless of the quality of work. The main objective of such pupils is to finish the work and say “I have finished “, despite the fact that they have not written properly. The “performance-oriented” mentality may easily translate into prioritizing task completion over task legibility, which could obstruct the learning of

appropriate handwriting and lead to repeated mistakes, as the pupil reinforces incorrect motor patterns through hasty execution (Graham & Weintraub, 1996).execution.

1.6.2. Teacher and Environmental Factors: The Pedagogical Atmosphere

Classroom conditions also give rise to another factor. Large classes, time constraints, and lack of writing materials could impede pupils from practicing writing effectively. It might be difficult for the teacher to offer the needed individualized “corrective feedback” to pupils because of overcrowding in classrooms. Crucially, the "Teacher’s Own Penmanship" acts as a silent curriculum; if the teacher’s handwriting on the board is inconsistent, the pupils lack a stable "Visual Anchor" to emulate. learning environment could help pupils concentrate better on their handwriting skills. An efficient learning environment, including appropriate lighting, comfortable furniture, and a peaceful surrounding, may aid pupils in focusing on their handwriting abilities. Poor ergonomics, such as chairs and tables that are either too tall or too short, may result in discomfort and prevent pupil from holding a pencil efficiently. This is termed “Postural Stability,” in the sense that postural stability of the trunk is needed for mobile hands; otherwise, if the chairs do not help in holding up the feet and back, the fine motor control of the fingers is bound to be affected.

In addition, the increase in the use of technology could also affect pupils' handwriting skills. Most pupils spend a lot of time using computers along with electronic gadgets for typing rather than handwriting. The transition to "keyboard typing" at such a young age may result in reduced fine motor coordination and eye-hand coordination skills necessary for handwriting. While technology is a valuable educational tool, its premature dominance may deprive pupils of the sensory-motor experiences needed to master the art of writing.

Apart from physical arrangement, one aspect that cannot be overstated but largely underappreciated is the "Sensory-Emotional Biofeedback Loop". According to research, handwriting is a "two-way communication" between the hand and the brain's emotional centre (James & Engelhardt, 2012). is "two-way communication" between the hand and the limbic region (emotional center of the brain). In situations when the pupils experiences difficulties owing to bad

ergonomics or awkward pen holding, the physical stress generated activates what scientists

call "Micro-Stress Response" filling the working memory of the pupil and reducing their frustration tolerance level. On the other hand, physical sensation of the pen effortlessly moving on a high-quality sheet of paper creates a sense of "Flow," wherein the anxiety levels of the pupils are diminished and the cognitive concentration heightened. This means that the physical attributes of tools used are not just a convenience but a psychological imperative determining affective readiness of the pupil to learn.

Thus, the learning process of handwriting is affected by a combination of personal, pedagogical, and environmental factors. A holistic method which takes into account all these different factors is needed in order to guarantee that all pupils are able to master the skills of writing needed for future educational success.

1.6.3.The Home Environment and Early Exposure

Apart from the educational system, the home environment is crucial in preparing a pupil for handwriting. If a pupil comes from a family where pupils are encouraged to participate in fine motor tasks like drawing, painting, or handling small items, the individual will be ready to start the third year with greater muscular control. This is commonly referred to as "Pre-literacy Graphomotor Skills," whereby manipulating blocks and using safety scissors strengthens the "Intrinsic Muscles" of the hand well before pencils are even considered (Weintraub & Graham, 2000). Parents' attitude toward handwriting also affects pupils' motivation. If parents stress the importance of legible handwriting and create a conducive environment for doing homework, pupils will become proud of their handwriting. However, failure to introduce a pupil to writing materials early may impair a pupil's graphomotor skills, creating a "Readiness Gap" that becomes increasingly difficult to bridge once formal schooling begins (Santangelo & Graham, 2016).begins.

1.7 Role of the Teacher in Teaching Handwriting

The teacher's role in handwriting education extends well beyond mere demonstration of letter shapes. Effective teachers diagnose individual pupils' needs, scaffold skill development, and create a supportive learning environment. They use multisensory approaches to teach which involve sight, sound, and physical activities. In addition, the teacher evaluates and gives appropriate feedback to the learners. Praise and patience by the teacher have a huge impact on learners' attitudes towards handwriting.

Building on this multifaceted role, The teacher is the focal point in the development of the pupils' handwriting ability. In the pedagogical context, the teacher acts as the primary mediator between the pupil's motor potential and the formal requirements of the school curriculum. Handwriting is not a naturally developed skill; hence, there is a need to instruct and guide the pupils, along with regular practice. Whereas language learning is acquired through the process of immersion, handwriting demands "Explicit Instruction," whereby the teacher simplifies the complicated movements to manageable steps for the pupils to emulate. This instructional scaffolding is vital because handwriting is a "haptic" skill that bridges the gap between tactile sensation and visual perception, requiring the teacher to synchronize the pupil's eye-hand coordination through multisensory techniques.

The teacher is required to instruct the pupils clearly about the proper writing of letters, spacing, and writing posture. "Further development of the spatial concept could be facilitated through the use of 'tactile or visual aids', such as rulers or specially designed lined sheets. In this case, the teacher should help the pupil understand 'spatial constancy', whereby all letters would be placed appropriately on the line and would have equal height. Through instruction of using rulers as the border for writing, the teacher would assist pupils in understanding 'linear constraints'. Thus, they learn to control visual mess and acquire 'spatial security' – the most crucial step in learning how to write professionally." This includes demonstrating the "starting point" and the "directionality" of each stroke, which are crucial for developing speed and legibility. To further refine spatial awareness, the teacher may implement 'tactile guides' or rulers, helping pupils internalize 'linear constraints' and achieve spatial consistency on the baseline. At the same time, the teacher has to keep track of the pupils' performance and provide continuous formative feedback . These measures make it possible to detect early "maladaptive habits," including the use of an inappropriate pencil grip and incorrect writing skills, that may be challenging to change at a later stage. In this crucial period of diagnosis, it is important for the teacher to ensure that the process of practice is 'deliberate' and not simply repetitive in nature. Unlike the traditional practice as a punishment such as writing a sentence 100 times is often counterproductive., such an approach of using 'mindless repetition' is often counter-productive as it makes the hand tired and promotes bad writing practices, since now the pupil is concerned more with completing the task rather than focusing on writing correctly. Rather, it is the job of the teacher to help the pupils adopt the principle of 'quality over quantity,' where the process of developing neuromuscular memory is based on proper technique. Good teaching of handwriting enables the pupils to be more automatic in their writing. This enables the pupils

to be more effective in developing their higher-order writing abilities. According to Bridwell (1981, cited in Graham, 1992)

The mental load imposed by translation becomes lighter as an increasing number of writing” skills become automatic rather than consciously driven .(P.1)

This implies that if the pupils are good at handwriting, they are more likely to be more effective in their thinking and expression. If the instructor achieves this effectively, the pupil’s “Cognitive Bandwidth” is released from the mechanical battle and refocused on more complicated cognitive activities such as planning and revising. Research in neurology supports the fact that the teacher plays an important part in developing the automaticity process because, by writing, the "reading circuit" of the brain is activated as well. In addition, the teacher is also important in motivating the pupils. Through the creation of a positive and encouraging learning environment, the teacher will be able to eliminate “writing anxiety” and encourage “penmanship pride.” This will allow the pupils to take an interest in their penmanship, leading to improved performance. In addition, the position of the teacher as a “role model” is very important, when pupils observe the teacher writing neatly on the board, they are more likely to emulate those high standards in their own notebooks. An effective approach that can be used by the teacher is the one known as "Intentional Error Modeling," which involves creating deliberate handwriting errors on the blackboard like incorrect letter slants or uneven spacing for pupils to notice and rectify them.

The use of this "Metacognitive Approach" would ensure that rather than just imitating the teacher, pupils actively analyze the process of writing. Through error demonstration, the teacher eliminates the stigma attached to committing mistakes, and the pupils become aware of how to "Self-Correct."

Finally, by addressing 'individual biomechanical differences' such as supporting left-handed writers the teacher ensures an inclusive and successful learning journey for every pupil.

1.8.Role of the Learner in Learning Handwriting

The learner also has an important role to play in the development of handwriting skills. While the teacher provides support and assistance, the development of handwriting skills depends on the efforts of the learner. Handwriting is a "self-regulated" activity that requires the pupil to maintain a high level of sensory-motor awareness and persistence throughout the learning

process.

First and foremost, proper posture and pen grip should be emphasized in order to improve handwriting skills. A successful handwriting process starts from the biomechanics of the body; this involves the pupil's seating position, the angle of the paper, and the firmness of the forearm on the desk. The essential thing is that the learner should comprehend the "kinetic chain," wherein the stability of the core and shoulder enables the flexible movement of the fingers. According to educational specialists "the tripod grip is best for controlling the pencil and is least likely to involve muscular strain, which is helpful for cursive writing" (Taylor&Huffty,2013, p. 45).

This "tripod grip" where the pencil is held between the thumb and index finger and rests on the middle finger allows for the greatest range of movement and precision. In this mechanical process, the role of the individual is that of the "Sensory Processor," where the pupils cultivates the skill of "Pressure Regulation." The individual has to be careful enough not to see the pen as "a feather" instead of a "dagger," for which reason no physical stress will be created due to which no fatigue in writing can arise. It will be through "Tactile Discrimination" where the pupil learns to feel the resistance of the paper and adjust their grip strength accordingly, transforming the hand from a rigid tool into a flexible instrument of thought. However, some learners experience difficulties in proper pen grip, which affects their writing skills. These issues frequently result in "hand cramping" and exhaustion, which makes the pupils generate uneven or erratic lines. In relation to third-grade pupils , it is necessary to rectify a poor grip, because it will ensure that ineffective physical habits do not become entrenched, affecting their later handwriting ability. Beyond the grip, the learner must also manage "proprioceptive feedback" the ability to sense the amount of pressure exerted by the pen to avoid tearing the paper or producing faint, illegible lines.

Secondly, practice is essential in the development of the pupils' handwriting skills. Handwriting is a motor habit that is refined through "muscle memory." Pupils who practice regularly have a higher probability of improving their performance as opposed to those who do not practice by engaging in writing exercises. The repetition of this process shouldn't simply be repetitive; it has to be "deliberate practice" where the learner concentrates on various aspects like letter size, angle, and spacing. This deliberate practice helps the learner develop an "Internalized Mental Prototype" of each letter, allowing them to retrieve the correct shape from long-term memory without visual prompts. Motivation and self-confidence of the pupils

also contribute to the development of the pupils' handwriting skills. The psychological state of the learner acts as a catalyst for their physical performance. This can be supported by the following quotation by Graham (1992) "Students who have considerable difficulty with handwriting, spelling, and other text production skills may avoid writing whenever possible and come to doubt their own capabilities as writers" (p. 1).

This implies that the attitude of the pupils is a vital aspect in the development of the pupils' handwriting skills. In addition to the physical and motivational dimensions of the role of the learner, it is worth considering the "Metacognitive" aspect, namely the capability for self-evaluation.

At this stage, in the third year of primary education, the pupil is supposed to become a more active participant in assessing their writing, moving away from being an object of teachers' corrections to being a subject of self-corrections. It means that pupils need to be able to reflect on their handwriting by looking through what they have written and finding problems with consistency in letter sizes, spaces between letters, and alignments.

By prompting pupils to "self-correct," the teacher helps the pupil acquire a better "orthographic awareness," thus ensuring that they memorize appropriate motor actions. This role transformation helps improve readability and makes pupils more active learners rather than passive writers. Learners are involved in the process of gaining skills in handwriting through practice, monitoring, and motivation. In the third year primary school, pupils start integrating handwriting rules and adopting their own ways of improving their handwriting.

Goal setting, cooperation among peers, and reflection help learners become more independent and consistent. Obstacles faced during the learning process can be viewed as chances to develop resilience. " In essence, the process of development is the process of changing from a mere copycat to a more independent thinker. As cited by Scardamalia (1982), "When handwriting is not automatic, it acts as a barrier to the thinking process, as it consumes the concentration necessary for higher-level mental processes." This is why pupils should make efforts and be involved in developing their handwriting skills consciously.

In the third-year primary school, pupils will start implementing their own handwriting standards and ways of improving them by developing something like 'the Internal Forward Model,' which involves predicting and correcting their strokes subconsciously. These

learners greatly benefit from setting their goals, cooperation with peers, and self-reflection that promote their independence and perseverance. Handwriting difficulties faced by learners, such as keeping 'the Seyes interlines', become important factors that promote resilience. "An effortful approach to teaching handwriting that emphasizes effort promotes perseverance and develops automaticity."

1.9.conclusion

In this chapter, a comprehensive theoretical overview of the concept of handwriting in primary education has been provided. Handwriting has been defined not merely as a mechanical exercise, but as a complex developmental skill that involves a sophisticated integration of cognitive, motor, and perceptual processes. Furthermore, the vital importance of handwriting in relation to literacy skills and written composition has also been discussed, emphasizing how its mastery serves as a cornerstone for academic achievement.

Moreover, the specific characteristics of third-year primary school pupils have been analyzed, highlighting this stage as a critical period for consolidating basic learning skills. The various

factors that affect the learning process ranging from internal pupil attributes to external environmental conditions have been explored. Finally, the roles of both the teacher and the pupil in the development of handwriting have been examined, illustrating that success in this multidimensional process depends on a combination of effective instruction and active learner engagement.

Ultimately, this theoretical framework demonstrates that challenges with writing skills are not singular problems; rather, they are linked to the mental burden and educational identity of the learner. The theoretical insights presented in this chapter lay a solid foundation for the empirical investigation that follows. Chapter Two will therefore shift from this conceptual grounding toward a practical examination of the research methodology, the data collection instruments, and the context in which this study was conducted.

Chapter Two

Data Analyses and Interpretations

2.1. Introduction

2.2. Research Design

2.3. Population and sampling

2.4. Research instruments

2.5. Data Collection Procedures

2.6. Data Analysis and Interpretation

2.7 Conclusion of Chapter Two

2.1. Introduction

Contrary to focusing merely on the theoretical approaches, the need to consider handwriting difficulties demands looking into practical classroom settings and opinions of concerned individuals. This chapter describes the methodology adopted during the study of writing difficulties faced by third-year primary school pupils. the selection of the study sample has been done from two primary schools in the Saida province, and the instruments employed in data collection included :a auestionnaire addressed to 10 teachers and 10 parents .a semi-structured intreview conducted with 4teachers, in addition to direct classroom observation .For data analysis, a combination of quantitative and qualitative approaches has been used, The chapter assists in providing a solid foundation for investigating the impediments in learning how to write legibly.

2.2. Research Design

Actually, a descriptive-Analytical research method has been used in order to investigate the phenomenon of difficulty in handwriting. Considering the type of research being conducted, the Mixed-Methods Research design was selected by the researcher. The combination includes:

- **Quantitative Data** which were gathered through structured questionnaires distributed to teachers and parents. This type of data is numerical in nature: responses were coded and converted into frequencies and percentages, then displayed in tables and figures to allow for statistical comparison and interpretation (Creswell, 2012).

- **Qualitative Data** that were collected via a semi-structured interview with teachers and a direct observation of pupils' writing habits.

Indeed, the use of such a research method will allow a more profound insight into factors that may affect the results of pupil's performance.

2.3. Population and sampling

The investigation was conducted in the province of Saida and focused on two primary schools selected as the main research sites.

2.3.1. The Schools

- a. Thabeti Senoussi Primary School (Municipality of Moulay Larbi).
- b. Cherifi Mostefa Primary School (Es-Sefala).

2.3.2. The Participants

- **Teachers:** A total of 10 teachers were selected. Their teaching experience provide valuable information about the teaching techniques adopted and the mistakes commonly made by pupil.

- **Parents:** A total of 10 parents were selected using purposive sampling, based on the criterion that they were parents of third-year primary school pupils enrolled in the two target schools. The parents were chosen to represent a variety of educational backgrounds and domestic environments in order to ensure diversity in the data. Given that many parents in the Saida region are more comfortable in Arabic, the questionnaire was translated into Arabic to facilitate comprehension and ensure the quality and reliability of responses. Their insights shed light on the importance of parental support in the development of pupils' handwriting skills at home.

- **Pupils :** The study was addressed to the Third-Year Primary pupils from both primary schools since these represent the setting where the basis for writing scripts can be established.

2.4. Research instruments

2.4.1 The Questionnaires

"**The Teachers' Questionnaire** was distributed to 10 teachers from Thabeti Senoussi and Cherifi Mostefa schools, focusing on identifying handwriting errors, teaching strategies, and institutional challenges such as class size. The researcher utilized these structured questionnaires as the primary quantitative tool to gather data from both teachers and parents. Questionnaires are considered an effective instrument in educational research as they allow for collecting descriptive data from a specific sample in a standardized manner (Dörnyei, 2003; Bell, 2014)."

- **Parents' Questionnaire:** the samples have been filled by 10 parents. In order to make sure that they understand the questions well and provide quality answers, the researcher supplied an Arabic version of the questionnaire to the parents, enabling them to answer about their kids' practice at home and use of technology to improve their handwriting skill.

2.4.2. Interview Guide

As a supplement to quantitative data, a semi-structured interview was conducted involving 4 teachers. It comprised 17 questions designed to help find out more about the underlying reasons for poor handwriting, such as the professional experience of teachers, the psychophysical causes of mistakes, and possible solutions for the current issue. The semi-

structured format is advantageous in this context as it provides the researcher with the flexibility to probe for deeper meanings and clarify complex issues that questionnaires might not capture (Bryman, 2016; Patton, 2015)."

2.4.3. Observation Scheme

Actually, the classroom observation has been used as one of the techniques to collect "first-hand" evidence related to how the pupils practice handwriting. With the help of the Observation Checklist, the researcher tracked:

- **Graphomotor behaviors:** pencil grip and pressure;
- **Ergonomic factors:** sitting position, paper orientation;
- **Visual-spatial perception:** respect for margin lines and interlines.

It was important to verify information obtained using questionnaires.

2.5. Data Collection Procedures

Data collection was done during the second term of the 2025/2026 academic year. These procedures involved:

1. **First Visits:** The researcher went to the two main schools to seek permission from the headmasters.
2. **Questionnaire Distribution:** The questionnaires were given to the ten teachers and mailed to the ten parents.
3. **Observations:** During the pupils' writing activities, the researcher used an observation checklist to observe physical behaviors that were not observable in questionnaires.
4. **Interviews:** Following questionnaire retrieval, quick interviews were conducted with the teachers on the most important and interesting points.

2.6. Data Analysis and Interpretation

This part contains the results of the research carried out through the data obtained from the two schools in Saida (Thabeti Senoussi School and Cherifi Mostafa School). The data analysis is done through three major segments which include the results of the questionnaire addressed to both teachers and parents, the information derived from interviews, and the observation result from classrooms observation. In addition, the data will be analyzed through charts and graphs to provide answers to the research questions.

2.6.1. Teacher Profile General Information

Initially, it is essential to analyze the demographic profile of the participants to understand the professional background of the teachers involved in this study. This helps in determining whether factors such as experience and training influence the way handwriting is taught in the third-year primary school..

The first section of the questionnaire gathered data regarding gender, years of experience, and professional training. The results are summarized in Table 03 below:

Question 01: Gender

Gender	frequency	percentage
Male	6	60%
Female	4	40%
Total	10	100%

Table 2.1: Gender Distribution

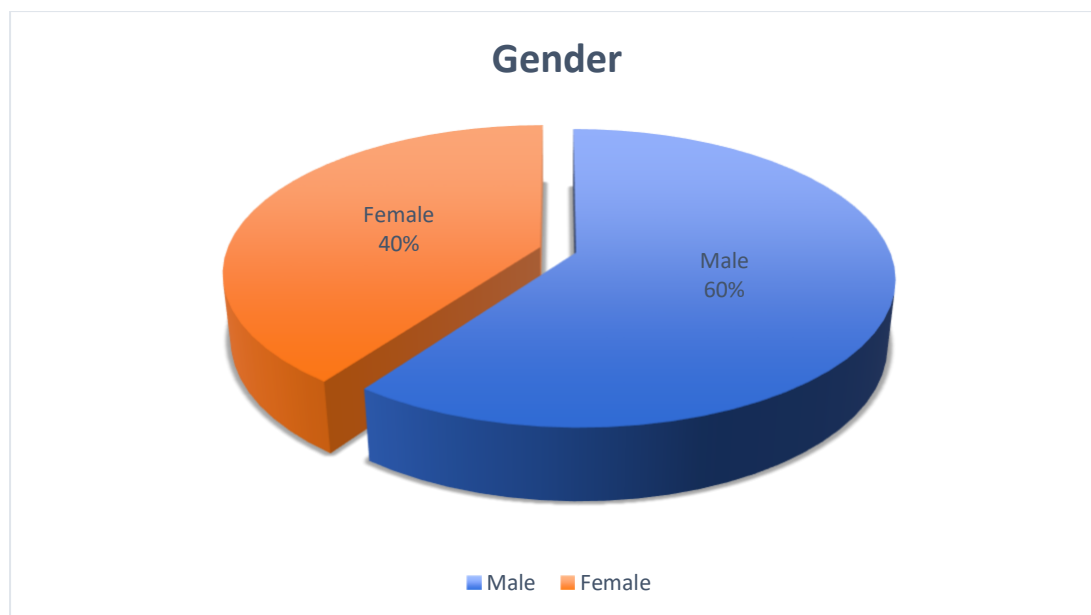


Figure2.1: Gender Distribution of teachers

As the table above demonstrates, the participating teachers are largely made up of males (60%), while females make up 40% of the total sample size. The sample is slightly dominated by male teachers as compared to female teachers who have been chosen from selected schools in the Saida

province . To provide a clearer visual representation of this gender proportion, the following figure is presented:

The above figure shows that male teachers represent 60% of the sample ,while female teachers account for 40% .This indicates a slight dominance of male teachers in this study . The next table tackles teachers' experience.

Question 02: Years of teaching experience:

years of experience	frequency	Percentage
1–2years	6	40%
3-4 years	4	30%
More than 4 years	0	00%

Table 2.2: Teachers' Years of Experience

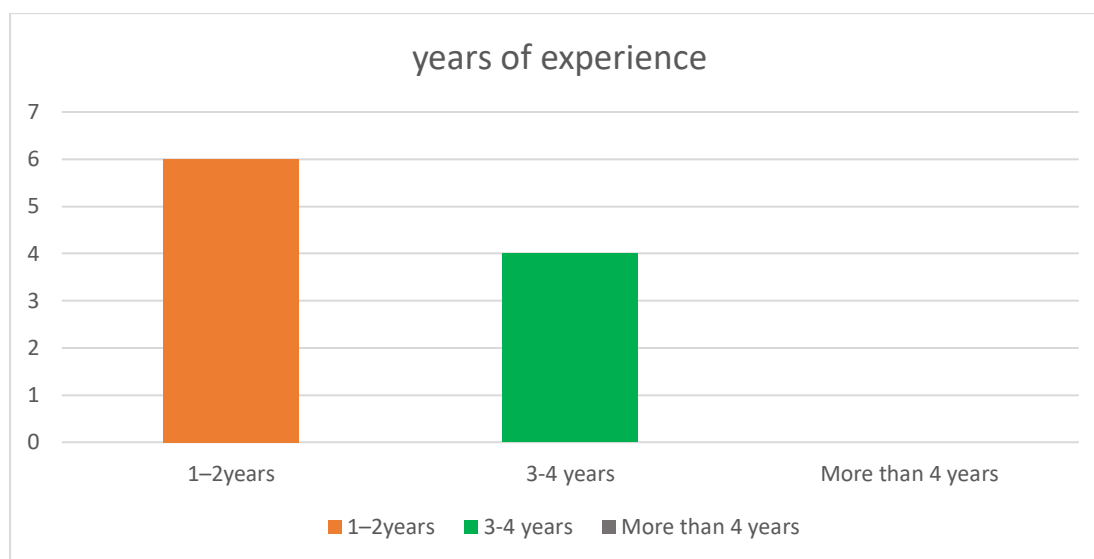


Figure 2.2: Teachers' Years of Experience

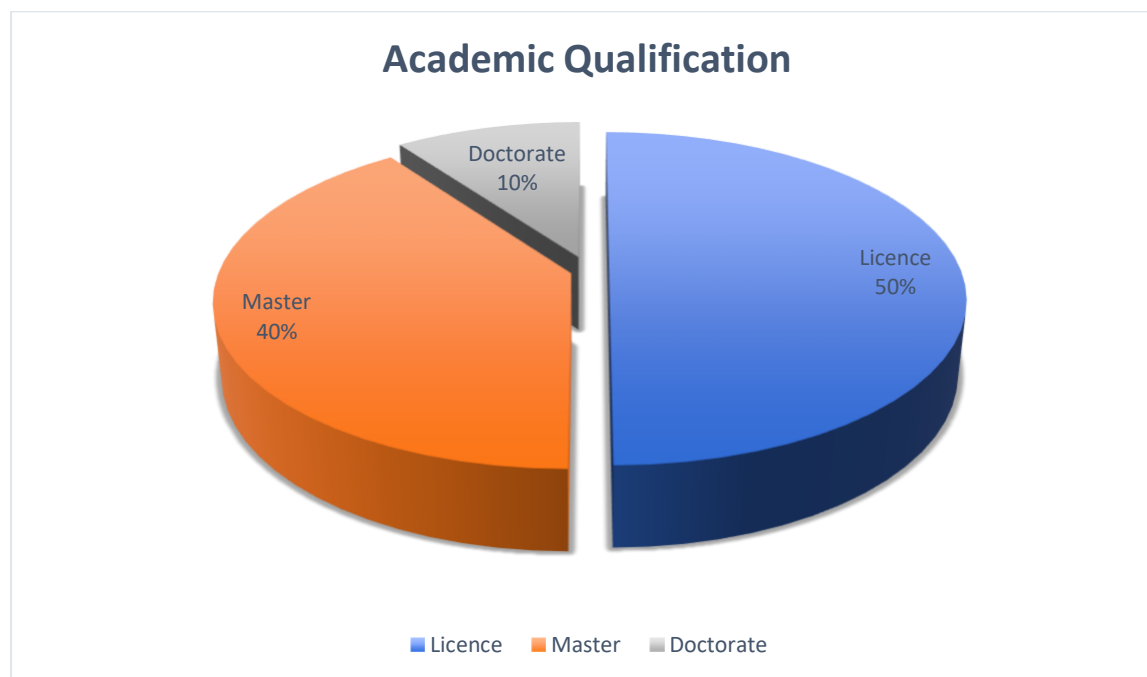
As the table above demonstrates, all the participating teachers possess a professional experience ranging from 1 to 4 years in teaching English at the primary level. Specifically, 60%

of the teachers are in their first two years of service, while 40% have 3 to 4 years of experience. This is a logical and expected finding given that English was only recently introduced into the Algerian primary education system (starting from the 2022/2023 academic year). Consequently, no teacher in this sector currently possesses more than 4 years of experience in this specific educational stage. To provide a clearer visual representation of this professional background within the new curriculum, the following figure is presented:

The figure confirms that the majority of the sample (60%) are beginning teachers with 1 to 2 years of experience, while 40% have between 3 and 4 years. This reflects the recent introduction of English at the primary level in Algeria (2022/2023). The next table demonstrates teachers' academic qualifications.

Question03:What Academic qualifications do you hold in English ?

Qualification	Frequency	Percentage
Licence	5	50%
Master	4	40%
Doctorate	1	10%

Table2.3: Academic Qualification**Figure2.3: Academic Qualification**

As can be seen from the table above, an equal number of teachers, precisely 50%, have the Licence degree, 40% have the Master's degree, and just 10% have the Doctorate degree. This shows that the sample comprises teachers who have good educational backgrounds, an important consideration when examining the acquisition of motor skills such as handwriting.

The following figure summarizes these academic qualifications graphically:

The majority of teachers (50%) hold a Licence degree, followed by 40% with a Master's degree. Only a small percentage (10%) hold a Doctorate, indicating that most teachers have moderate academic qualifications.

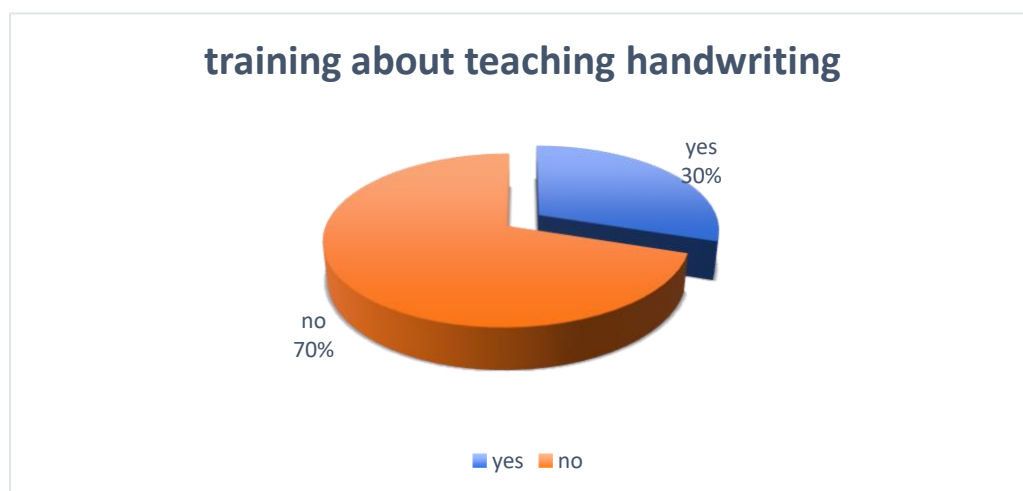
Question04: have you undergone any training about teaching handwriting

Answer	Frequency	percentage
yes	3	30%

No	7	70%
total	10	100%

Table2.4: Teachers' Training

As the table above demonstrates, a relatively large number of the teachers interviewed (70%) stated that they had never been subjected to formal training or workshops that would help them impart penmanship skills to students. This is an important point to note since it shows that most of the instructors depend on themselves rather than following any set standards while helping students improve their script.

**Figure2.4: Teachers' Training**

To provide a clearer visual representation of this training gap, the following figure illustrates these proportions:

A striking 85% of teachers have never received training on how to teach handwriting. This is a major finding because it shows that teachers need training, which might affect their outcomes since they are unable to help pupils with handwriting problem.

Question5: Do your pupils experience difficulties in handwriting?

Answer	Frequency	Percentage
--------	-----------	------------

Yes	9	90%
No	1	10%
total	10	100%

Table 2.5: Pupils' Handwriting Difficulties

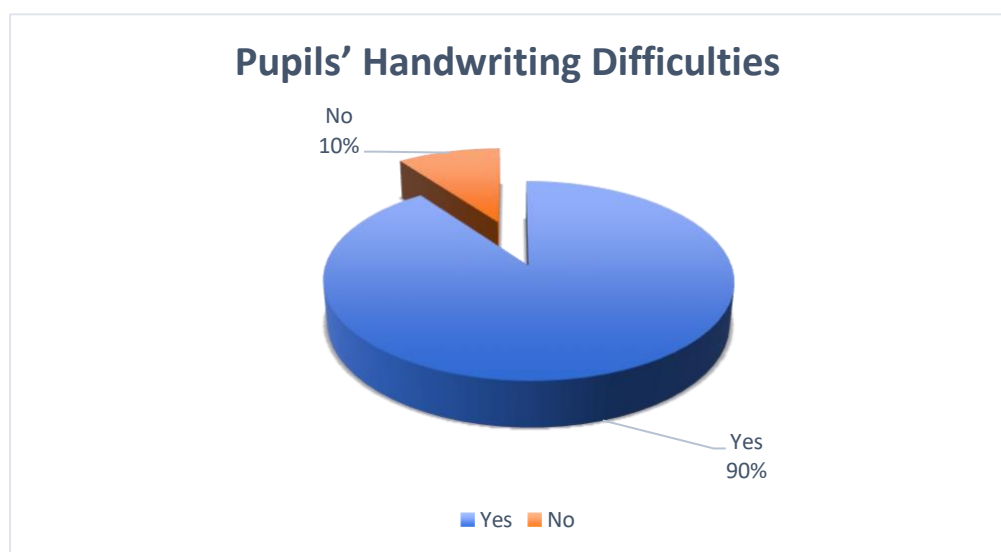


Figure 2.5: Pupils' Handwriting Difficulties

As the table above demonstrates, an overwhelming 90% of teachers confirm that their pupils experience significant handwriting difficulties. This high percentage highlights that handwriting problems are not isolated cases but rather a widespread phenomenon requiring urgent pedagogical attention.

To better visualize the scale of these difficulties in the classroom, refer to the following figure:

The majority of teachers 90% confirm that pupils experience handwriting difficulties .

Question6: What are the most common handwriting difficulties your pupils face?

Difficulty	Frequency	percentage
poor letter formation	8	80%

incorrect spacing	7	70%
slow writing speed	6	60%
unclear handwriting	7	70%
Mixing upper and lower case letters	5	50%

Table 2.6: Common Handwriting Difficulties

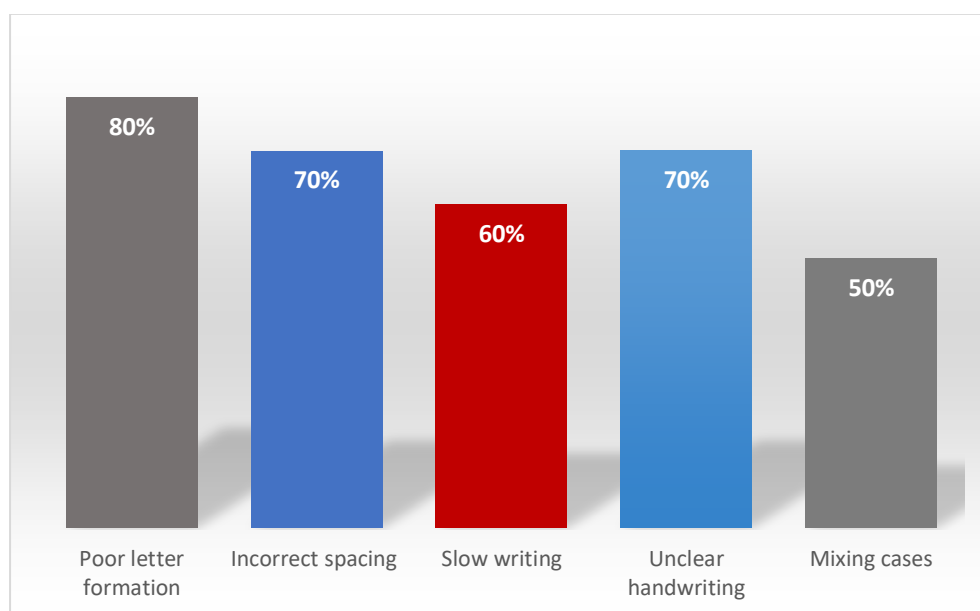


Figure 2.6: Common Handwriting Difficulties

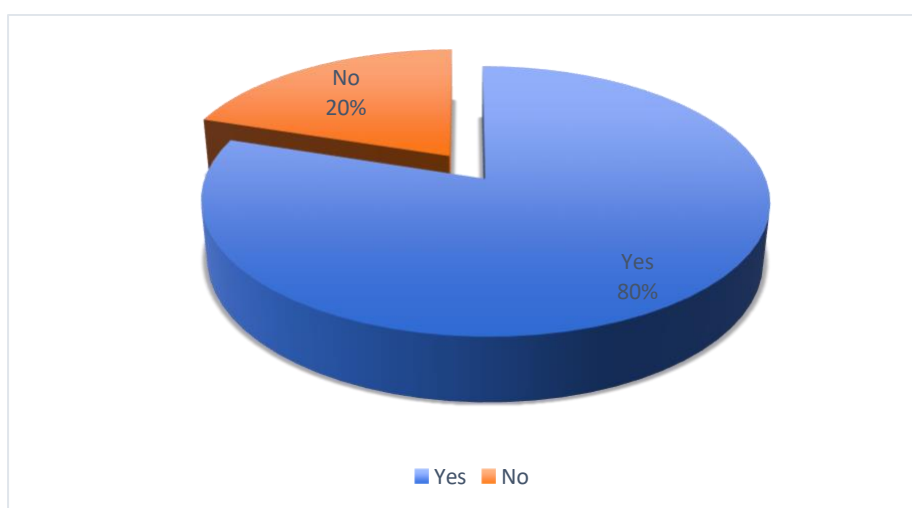
As is shown from the table above, the most common problem is "poor letter formation," which occurs in 80% of the cases, while "incorrect spacing" and "unclear handwriting" take second place, having occurred in 70% of the instances.

The following figure highlights the frequency of these specific handwriting obstacles:

The most common problems are poor letter formation and spacing .which reflects a lack of basic writing skills .

Question7: Do large class sizes affect your teaching of handwriting effectively?

Answer	Frequency	Percentage
Yes	8	80%
No	2	20

Table 2.7: Effect of Class Size on Teaching**Figure 2.7: Effect of Class Size on Teaching**

As the table above demonstrates, 80% of teachers agree that large class sizes are a major barrier to teaching handwriting effectively. This finding suggests that overcrowding prevents teachers from providing the individual monitoring necessary to correct pupils' physical behaviors and writing habits.

The following figure illustrates the perceived impact of class size on instructional quality:

Most teachers confirm that pupils face handwriting difficulties.

Question8: What strategies do you adopt to overcome these difficulties?

Strategies adopted	Frequency	Percentage
Using repetition and guided practice	9	90%
Monitor the pupil continuously	8	80%

Using copybooks for tracing	7	70%
Drawing letters according to the specified standards or the black board	6	60%
Encouraging daily writing exercises	5	50%

Table 2.8 : Strategies to Overcome Handwriting Difficulties

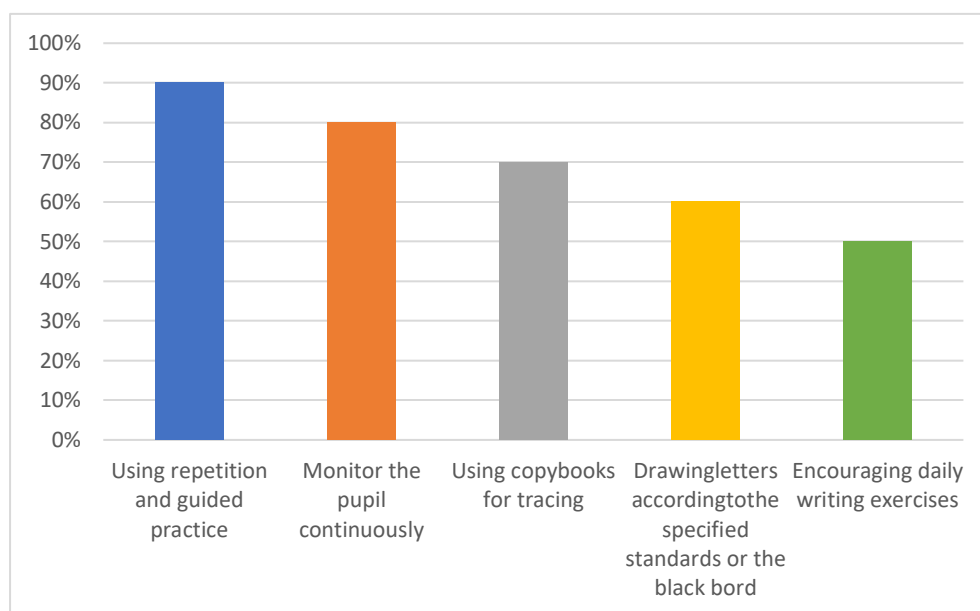


Figure 2.8 : Strategies to Overcome Handwriting Difficulties

As the table above demonstrates, the most common strategy used by teachers is "repetition and guided practice," adopted by 90% of the participants. This indicates a strong belief among educators that handwriting is a mechanical skill that requires constant drill to achieve "automaticity". Additionally, 80% of teachers emphasize "continuous monitoring," which is essential for correcting immediate errors in pen grip or letter direction, though its effectiveness is often hindered by large class sizes.

The following figure provides a clear graphical overview of these pedagogical strategies used to assist struggling pupils:

Question 9: What techniques do you use to help pupils improve their handwriting?

Technique	Frequency	Percentage
Tracing Letters	9	90%

Coping from the board	8	80%
Writing in lines (Guided writing)	7	70%
Dictation exercises	4	40%
Punishment (Repetitive writing)	2	20%

Table2.9: Techniques for improving Handwriting

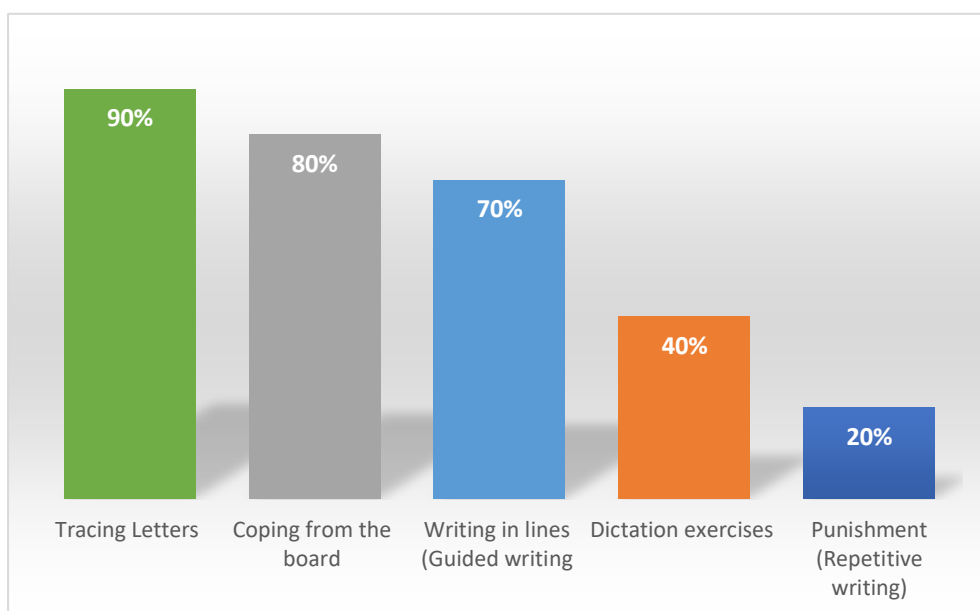


Figure2.9 :Handwritig improvement Techniques

As the table above demonstrates, teachers primarily rely on traditional mechanical techniques, with 90% of respondents using "tracing letters" and 80% focusing on "copying from the board". While these methods are fundamental for developing muscle memory and familiarizing pupils with English script, the analysis reveals a heavy reliance on passive imitation rather than active cognitive engagement.

The frequent use of "writing in lines" (70%) shows an awareness of spatial constraints, yet the lower percentage for "dictation exercises" (40%) suggests that pupils are rarely challenged to produce letters independently from memory. Furthermore, the mention of "punishments" involving repetitive writing (20%) is a concerning finding; according to pedagogical standards, using writing as a penalty can create a negative psychological association with the subject, potentially leading to further handwriting avoidance or anxiety. Overall, the data indicates a lack

of modern multisensory approaches—such as air writing or tactile exercises—which are essential for third-year primary pupils who are still developing their fine motor skills.

Sample Answers:

- Tracing letters
- Copying from the board
- Dictation exercises
- Writing in lines (guided writing)
- Giving punishments such as writing a sentence 20 times

To provide a clearer visual summary of the pedagogical tools used by teachers in the classroom, the following figures presents :

Question10: Does the use of technology have an impact on the handwriting skills of your pupils ?

Answer	Frequency	percentage
Yes	9	90%
No	1	10%
Total	10	100%

Table2.10:Technology impact

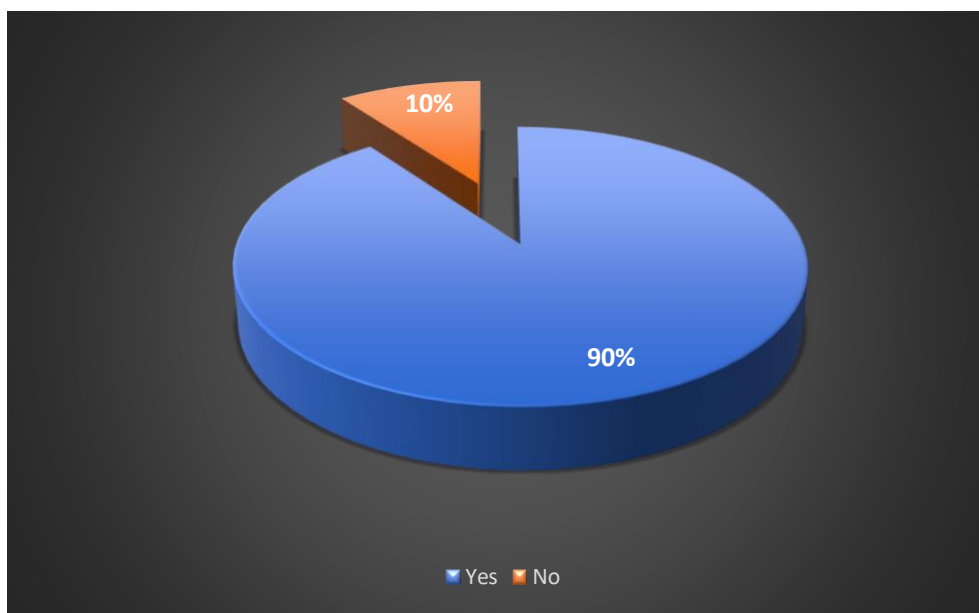


Figure 2.10: Technology impact

As illustrated above, 90% of the respondents think that the application of technology has a direct effect on the decline in the handwriting abilities of the students. It is possible that technology may have taken precedence over handwriting, resulting in poor motor skills among pupils.

The correlation between technology and writing skills is depicted in the figure below:

Most teachers (90%) believe that large class size negatively affects handwriting teaching.

Question 11: Do parents support their pupils in practicing handwriting at home?

Answer	Frequency	Percentage
Yes	6	60%
No	4	40%
total	10	100%

Table 2.11: Parents support

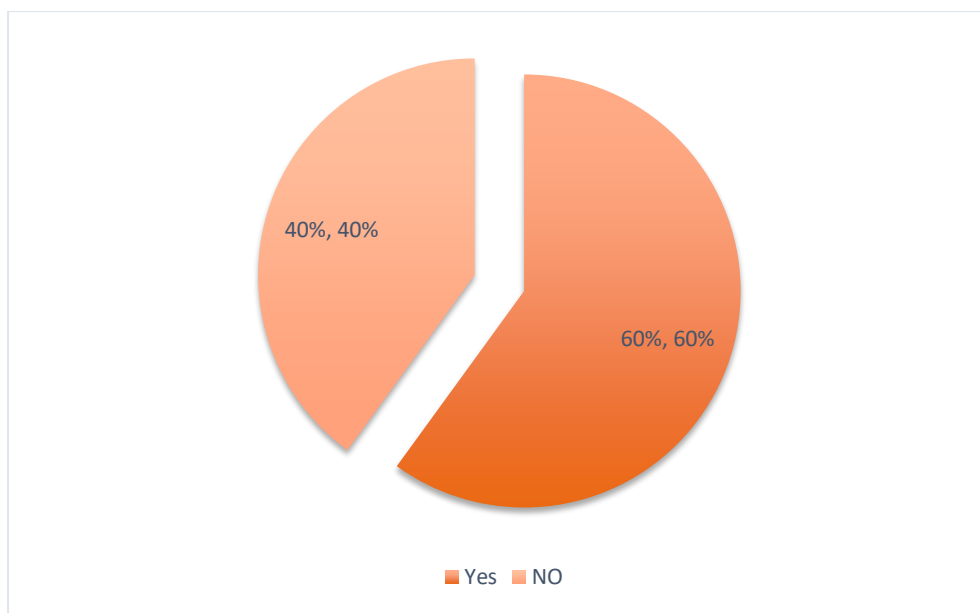


Figure2.11:Parents support

As the table above demonstrates, 60% of teachers believe that parents do support their children in practicing handwriting at home, while 40% feel this support is missing. This indicates that while more than half of the families are involved, there is still a significant portion of pupils who do not receive enough domestic reinforcement.

To provide a clearer visual representation of this parental involvement, the following figure is presented: **a clearer visual representation of thisparentinvolvement, the followg figure is presented** Parents play a supportive role, but not consistently.

Question12: Do you apply special techniques for the improvement of your pupils' handwriting skills?

Answer	Frequency	Percentage
Yes	5	50%
No	5	50%
Total	10	100%

Table2.12:Use of special Techniques

The findings obtained in the table above are evenly distributed; while 50% use special methods to teach remedial handwriting, another 50% use ordinary methods. This implies that there is no particular method that the teaching staff uses.

The following figure summarizes the use of these specialized techniques:

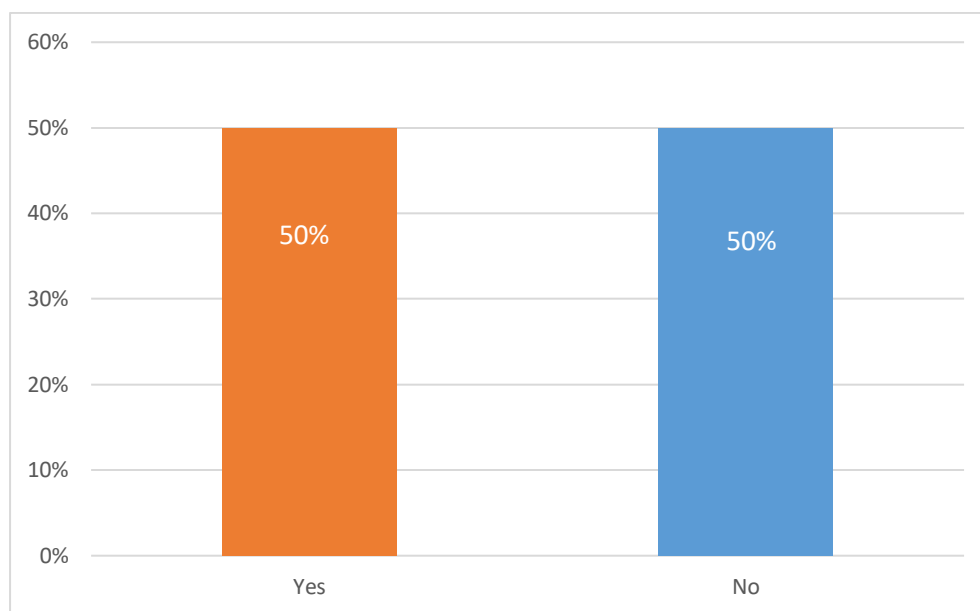


Figure2.12: Use of special Techniques

Sample Answers:

- Extra exercises
- Personalized correction
- Writing drills

Teachers are divided, which shows inconsistency in teaching practices.

Question13: According to your opinion, what could be the solution for the improvement of handwriting teaching?

Teachers suggest increasing handwriting practice time, reducing class size, and providing training for teachers. They also recommend using engaging activities and encouraging parents to support practice at home.

Question14:Do you think that learning French and English at the same time helps pupils improve their handwriting? How?

Most teachers believe that learning both languages can improve handwriting through more

practice and better letter recognition. However, some think it may confuse weaker pupils.

• 2.6.2 Parents' Questionnaire Analysis

Question 1: Does your child have difficulties in handwriting?

Gender	Frequency	Percentage
Male	8	80%
Female	2	20%
total	10	100%

Table2.13: Parents' Gender Distribution

It can be seen from the table above that the respondents are predominantly males (80%) and females are 20% in number. Thus, it is clear that in this particular case study, it was easier for fathers to be involved in the survey.

The following figure presents the gender distribution of the parents:

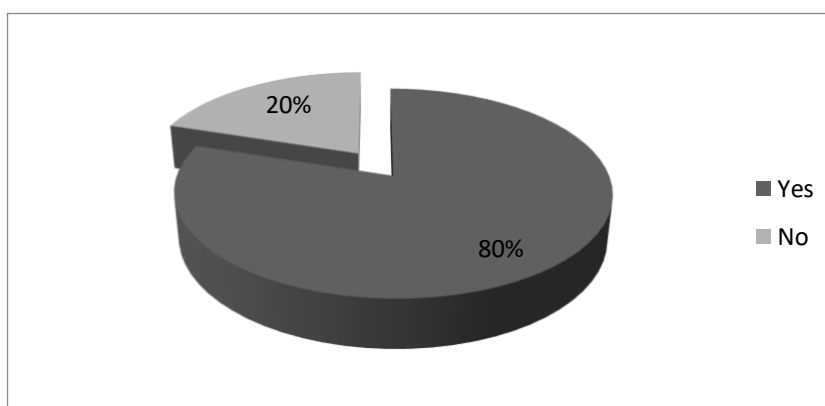


Figure2.13: Parents' Gender Distribution

The results indicate that the majority of respondents are male (80%), while females represent only (20%). This shows that fathers were more involved in answering the questionnaire.

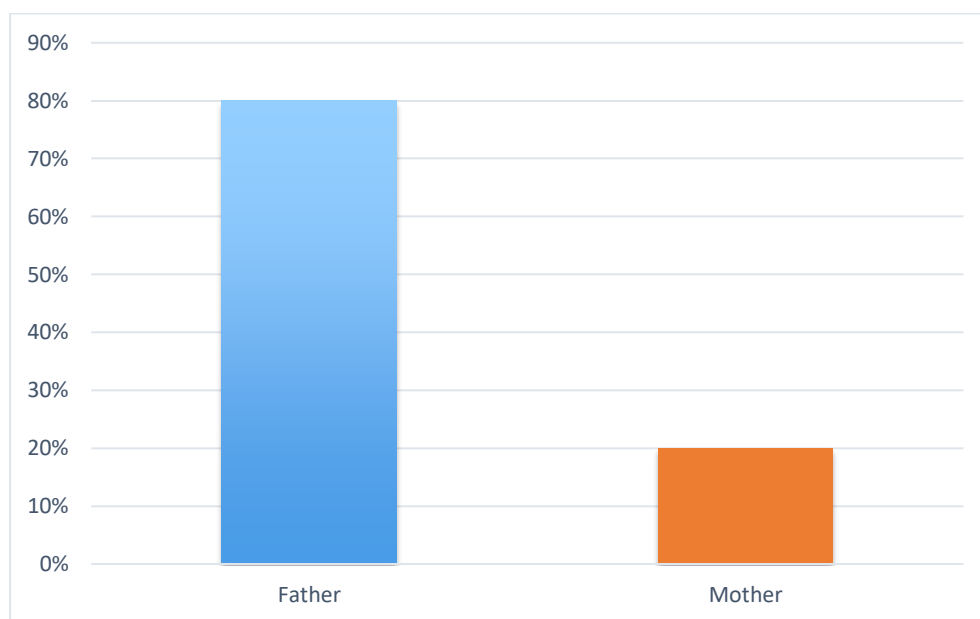
Question 2: Relationship to the Child

Category	Frequency	percentage
Father	8	80%
Mother	2	20%
total	10	100%

Table2.14: Parents' Relationship to the Child

As the table above demonstrates, consistent with the gender data, 80% of the respondents are the fathers of the pupils. This highlights the significant role fathers played in providing insights for this research.

To visualize the relationship category of the participants, refer to the figure below:

**Figure2.14: Parents' Relationship to the Child**

Most respondents are fathers (80%), whereas mothers represent a smaller proportion (20%).

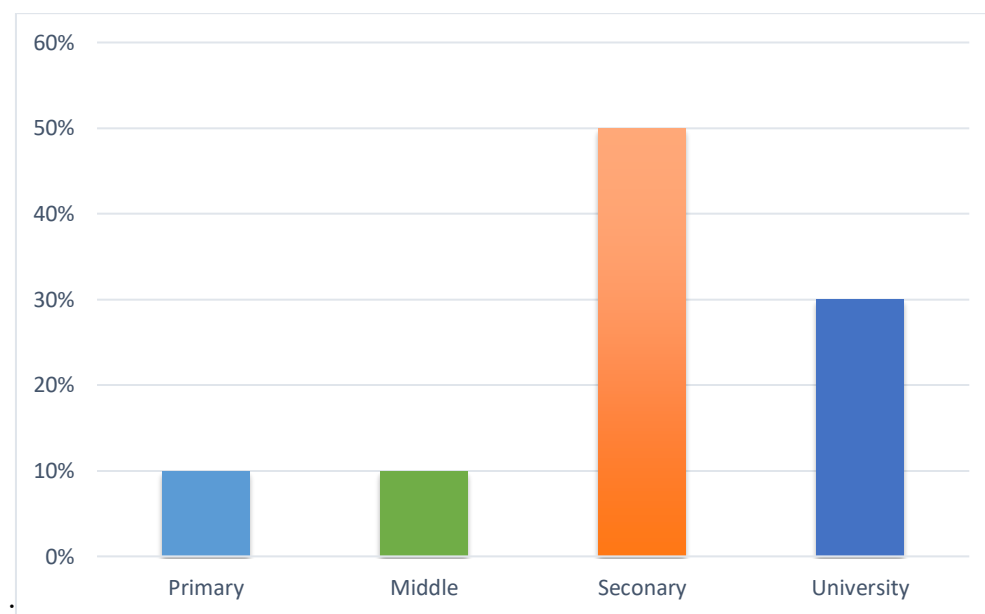
Question 3: Educational Level

Level	Frequency	Percentage
Primary	1	10%
Middle	1	10%
secondary	5	50%
University	3	30%
Total	10	100%

Table2.15: Parents' Educational Level

As seen from the table above, 70% of parents view their child's handwriting as "good", while 10% rate it as "poor". Such views could imply that parents are generally more lenient when evaluating handwriting quality than teachers.

The following figure illustrates how parents evaluate their children's writing levels

**Figure2.15: Parents' Educational Level**

The majority of parents have a secondary level of education (50%), followed by university level (30%).

Section Two: Child's Handwriting

Question 4: Handwriting Level

Level	Frequency	Percentage
Good	7	70%
Average	2	20%
Poor	1	10%
Total	10	100%

Table2.16: Pupils' Handwriting Level

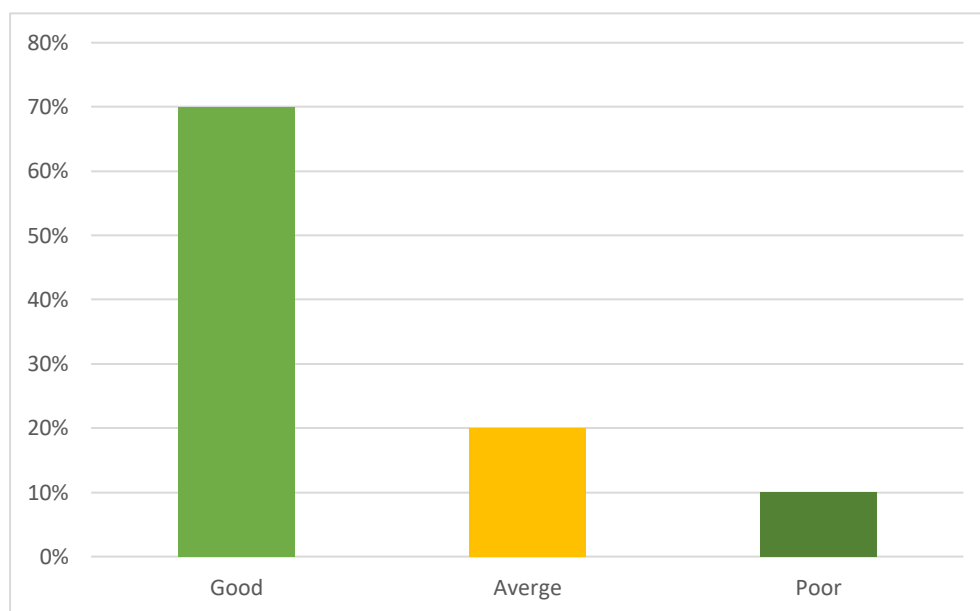


Figure2.16:: Pupils' Handwriting Level

As the table above demonstrates, there is a 100% consensus among parents that their children face handwriting difficulties. This total agreement confirms the teachers' observations and validates the need for this research project.

The following figure presents this unanimous acknowledgment of writing challenges:

Most pupils have good handwriting (70%), while only a small percentage (10%) have poor handwriting.

Question 5: Handwriting Difficulties

Answer	frequency	Percentage
Yes	10	100%
No	0	0%
Total	10	100%

Table2.17: Pupils' Handwriting Difficulties

As the table above demonstrates, there is a 100% consensus among parents that their children face handwriting difficulties. This total agreement confirms the teachers' observations and validates the need for this research project.

The following figure presents this unanimous acknowledgment of writing challenges:

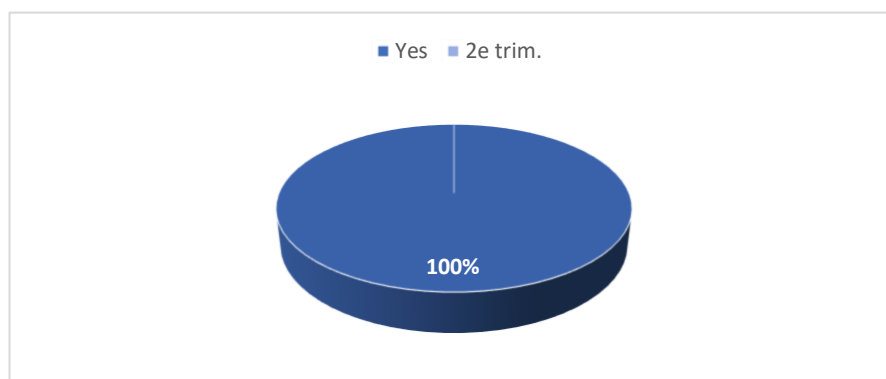


Figure2.17: Pupils' Handwriting Difficulties

All parents confirm that their children face handwriting difficulties.

Question 6: Type of Difficulties

Difficulty	Frequency	Percentage
Poor letter formation	5	50%
Slow writing	2	20%
Unclear handwriting	3	30%
Spacing Problems	0	0%

Table 2.18: Types of Difficulties

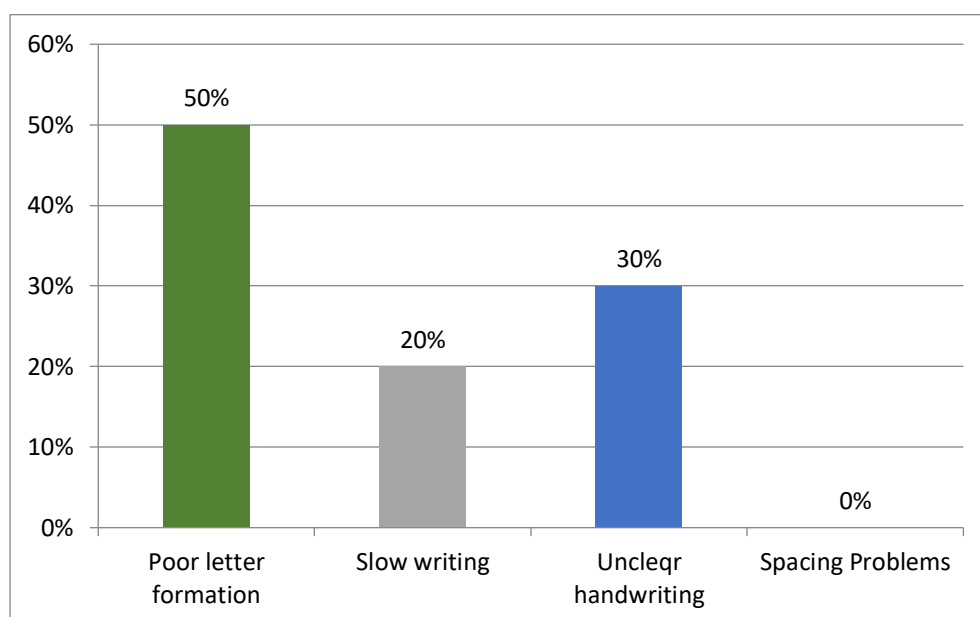


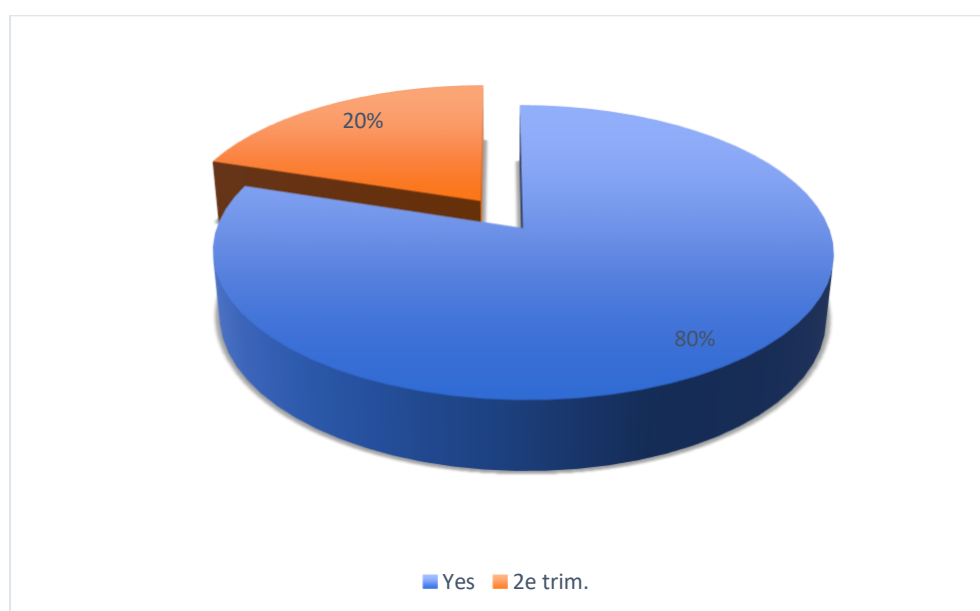
Figure 2.18: Types of Handwriting Difficulties

As the table above demonstrates, "poor letter formation" is identified by 50% of parents as the primary difficulty, followed by "unclear handwriting" at 30%. These findings align with the teachers' observations, confirming that the shape and legibility of letters are the main areas of struggle. The following figure highlights the specific types of difficulties according to parents:

Poor letter formation is the most common difficulty (50%), followed by unclear handwriting (30%).

Question 7: Complaints

Answer	Frequency	Percentage
Yes	8	80%
No	2	20%
Total	10	100%

Table2.19: Pupils' Complaints about Writing**Figure2.19: Pupils' Complaints about Writing**

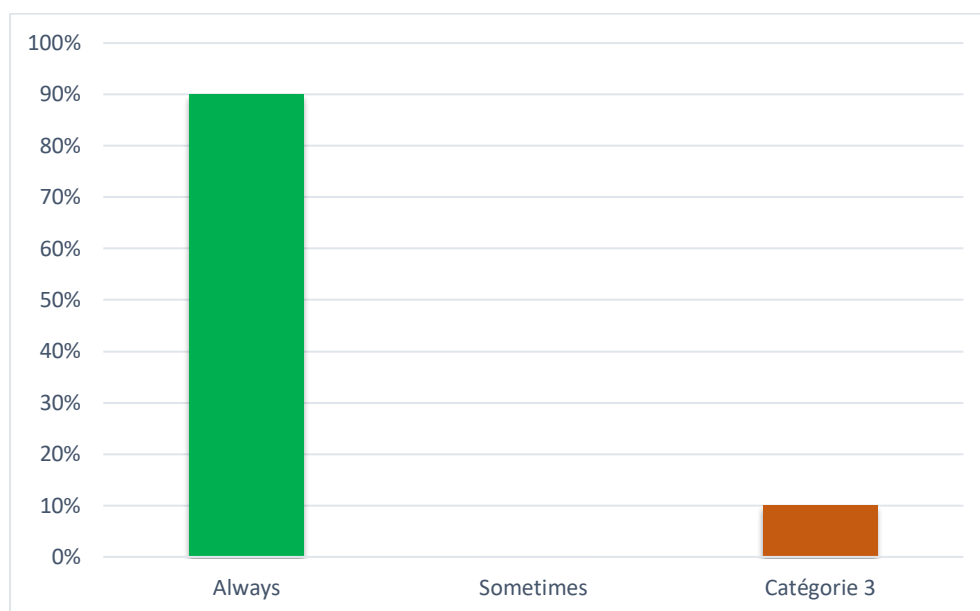
The chart above shows that a large proportion of 80% of parents say their kids feel stressed while working on writing assignments. It can be stated that handwriting is a skill that not only causes difficulties but also makes students feel stressed.

The following figure summarizes the frequency of these complaints:**the frequency of complaints:**

Most pupils (80%) complain about writing tasks.

Section Three: Practice and Support**Question 8: Practice at Home**

Answer	Frequency	Percentage
Always	9	90%
sometimes	0	0%
Rarely	1	10%

Table 2.20: Practice Frequency**Figure2.20: Handwriting Practice at Home**

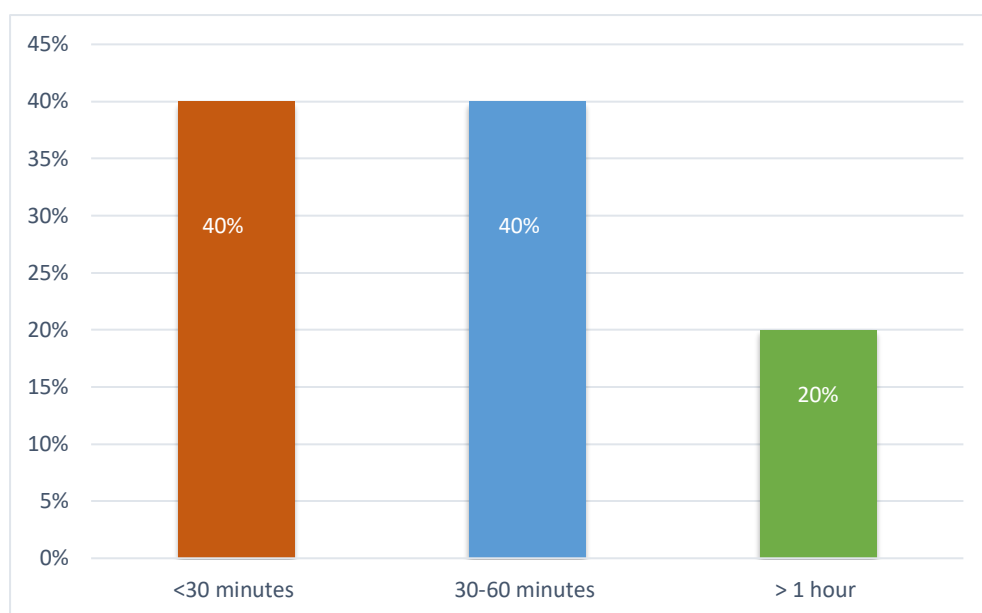
As the table above demonstrates, an impressive 90% of parents claim their children "always" practice handwriting at home. This reflects a high awareness among families of the importance of extracurricular practice.

The frequency of home practice is clearly visualized in the figure below:

Most pupils practice handwriting regularly at home.

Question 9: Time Spent

Time	Frequency	Percentage
<30 minutes	4	40%
30-60 minutes	4	40%
> 1 hour	2	20%

Table2.21:Practice time**Figure2.21: Time Spent on Handwriting Practice**

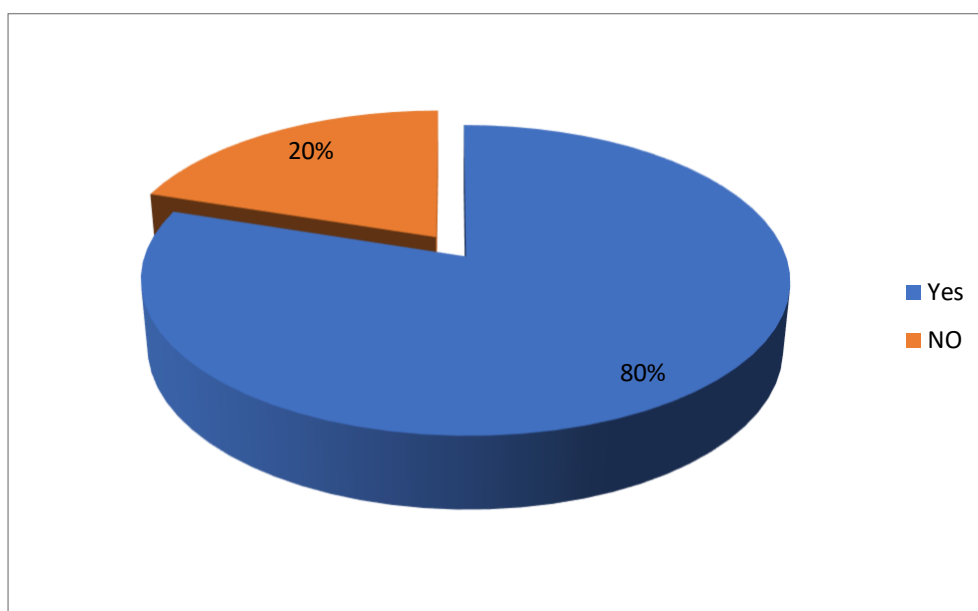
As shown in the table above, the duration of practice is distributed, where 40 percent spend less than 30 minutes, while the other 40 percent spend between 30 to 60 minutes. It shows that although practice is done regularly, it is done in short periods, which might not be sufficient for substantial skill development.

The following figure provides a graphical breakdown of the practice time:

Most pupils spend less than one hour practicing handwriting.

Question 10: Parental Help

Answer	Frequency	Percentage
Yes	8	80%
No	2	20%
total	10	100%

Table2.22: Parents' Help in Handwriting Practice**Figure2.22: Parents' Help in Handwriting Practice**

As the table above demonstrates, 80% of parents report that they actively help their children with handwriting practice. This indicates a high level of parental concern, although the effectiveness of this help may be limited without proper teacher guidance.

The extent of parental involvement is clearly shown in the figure below:

Most parents help their children in handwriting practice.

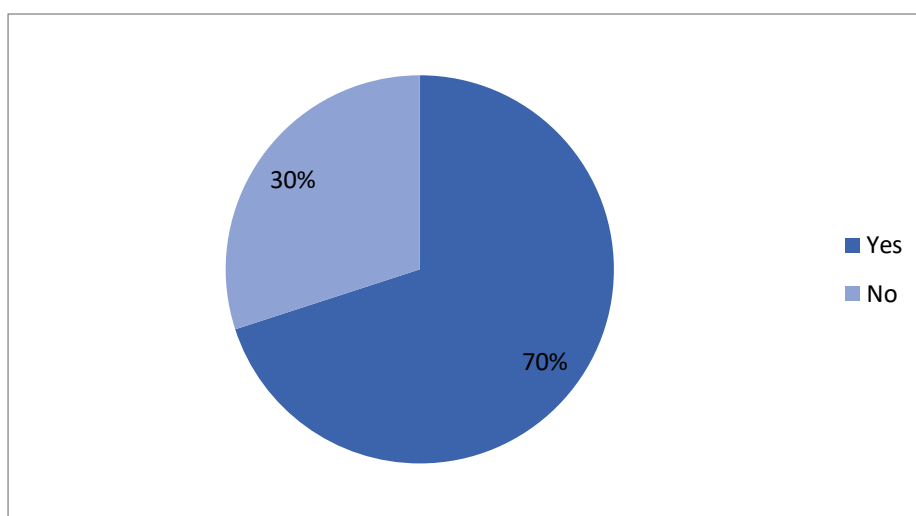
Question 11: Open-ended**Analysis:**

Parents reported helping through:

- Supervising homework
- Providing extra exercises
- Correcting mistakes
- Encouraging practice

Question 12: School Support

Answer	Frequency	Percentage
Yes	7	70%
No	3	30%
Total	10	100%

Table2.23; School Support for Handwriting**Figure2.23: School Support for Handwriting**

As can be seen from the table above, 70% of parents think that the school helps pupils develop their writing skills to a sufficient degree. It means that people feel content about the work done by institutions despite all the problems identified by teachers.

The parents' perspective on school support is illustrated in the figure below:

Most parents believe the school provides enough support.

Section Four: Importance and Suggestions

Question 13: Importance

Answer	Frequency	Percentage
Yes	9	90%
No	1	10%
Total	10	100%

Table2.24: Importance of Handwriting

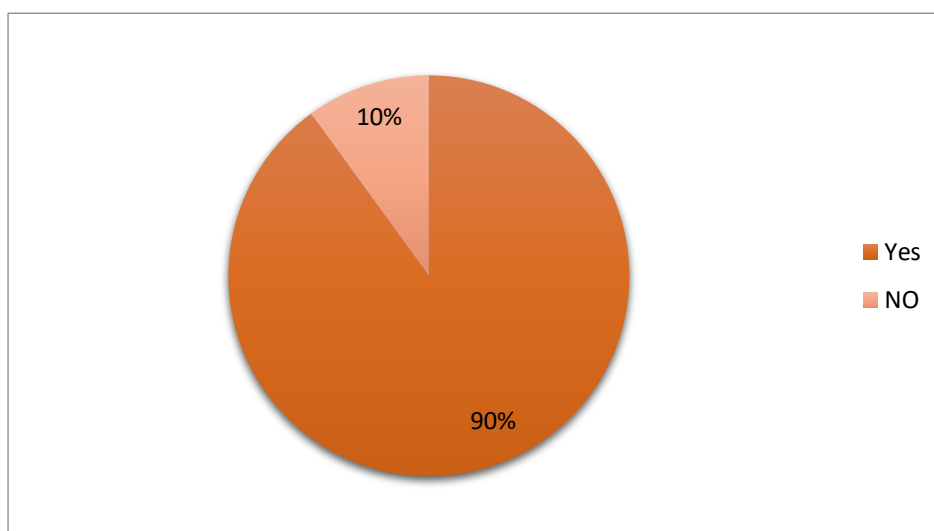


Figure2.24: Importance of Handwriting

As the table above demonstrates, 90% of parents consider handwriting to be a very important skill even in the digital age. This strong belief provides a solid foundation for any future school-home collaboration to improve writing standards.

The following figure presents the value parents place on handwriting skills:

Most parents believe technology negatively affects handwriting.

Question14: Do you think that learning French and English at the same time helps pupils improve their handwriting? How?

Answer	Frequency	Percentage
Yes	9	90%
No	0	0%
Total	10	100%

Table2.25: Impact of Technology on Handwriting

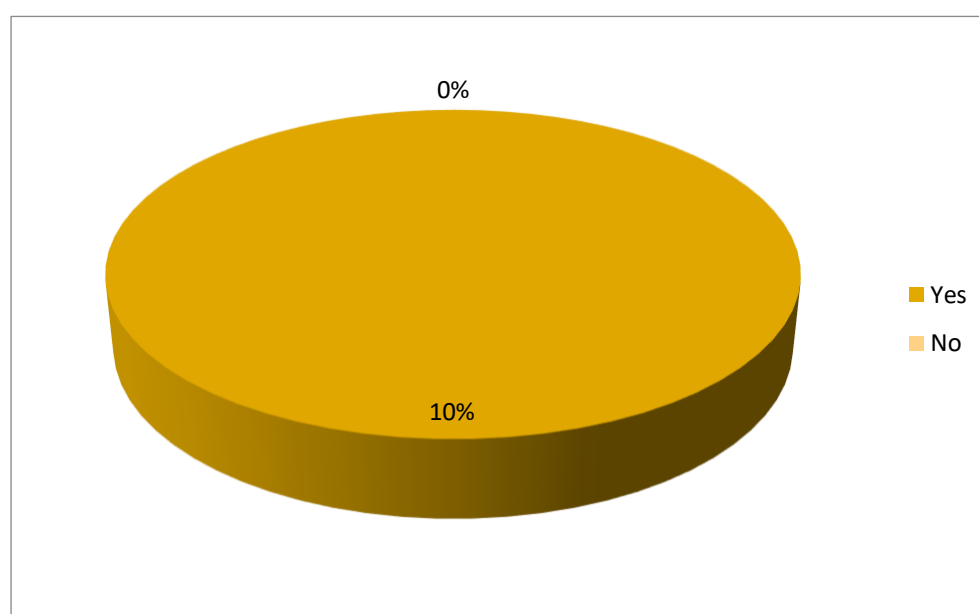


Figure2.25: Impact of Technology on Handwriting

The above table shows that 90% of parents feel that technology affects their kids' ability to write by hand. This is an issue of common worry for both teachers and parents concerning the impact of technology on the handwriting problem.

The following figure illustrates the parents' views on the role of technology:

Question 15: Open-ended

Parents suggested:

- More handwriting practice
- Reducing screen time
- More teacher support
- Extra home activities.

2.6.2 Classroom Observation Results

Twenty pupils at Thabeti Senoussi and Cherifi Mostefa schools were studied by the researcher. The following findings emerged from this process:

- Physical Behaviors: 75% showed bad posture behavior, while 70% had a wrong pencil grasp.
- The Ruler Effect: A staggering 35% of pupils used rulers to write the alphabet (for example, l and t). It is clear proof of the absence of motor security and "automacity."

2.6.3 Results of Teachers' Interviews: Qualitative Insights

The insights gained from semi-structured interviews with 4 teachers revealed critical factors affecting handwriting instruction. Since English was recently introduced to the Algerian primary education system, all interviewed teachers reported a professional experience not exceeding 4 years. This qualitative phase allowed for a deeper exploration of the "Class Size Comparison" and pedagogical challenges:

- **Small Class Sizes:** There was little challenge in dealing with classes at Cherifi Mostefa School, where the number of pupils was 10. Teachers could provide individual feedback and monitor physical behaviors effectively.

- **Crowded Classes:** At Thabeti Senoussi School, teachers found it hard to teach large classes and could not correct wrong behaviors such as the pupils' reliance on rulers to draw letters.

Analysis of the 17 Interview Questions:

1. Can you describe your experience in teaching handwriting to third-year primary pupils?

- **Response:** "It is a foundational stage. Since we only have a few years of experience in this new curriculum, we are still discovering the best ways to help pupils transition to English script".

2. Have you received any training on teaching handwriting?

- **Response:** "No, our initial training focused on general pedagogy and language skills, but specific workshops on graphomotor skills were missing".

3. How would you describe your pupils' level in handwriting?

- **Response:** "Generally average to poor. Many pupils struggle with the direction of English letters compared to Arabic".

4. What are the most frequent handwriting errors your pupils face?

- **Response:** "Letter slant, inconsistent size, and struggling to stay within the lines".

5. In your opinion, what are the main causes of these difficulties?

- **Response:** "Lack of early motor practice, the influence of digital devices, and the pressure of finishing the syllabus quickly".

6. How do you usually deal with pupils who have handwriting problems?

- **Response:** "I try to give them extra attention during writing tasks, but it is difficult to reach everyone in a limited time".

7. Do you think class size affects handwriting teaching? Why?

- **Response:** "Absolutely. In a class of 10, I can guide every hand. In a class of 30 or 40, I can only check the final result on the paper".

8. What strategies do you use to help pupils overcome handwriting difficulties?

- **Response:** "Using repetition, guided practice, and continuous monitoring during classroom activities".

9. What techniques do you use to improve pupils' handwriting?

- **Response:** "Tracing, copying from the board, and sometimes using specialized copybooks for extra drills".

10. What suggestions would you give to improve handwriting teaching?

- **Response:** "Reducing class sizes, providing specialized training for English teachers, and introducing specific 'handwriting hours' in the schedule".

11. How do pupils' sitting postures affect their writing?

- **Response:** "Most pupils have bad posture, leaning too close to desks, which causes fatigue and unclear handwriting".

12. Do you notice a difference between pupils who practice at home and those who don't?

- **Response:** "Yes, pupils with parental support show much faster progress in letter recognition and neatness".

13. Do you find the English 3PS textbook helpful for handwriting?

- **Response:** "It provides a base, but it is not enough; we often need supplementary materials".

14. Does the use of pencils vs. pens make a difference in the 3rd year?

- **Response:** "Pencils are better for this level as they allow for erasing and correction without making the paper messy".

15. How do you handle pupils who use rulers to 'draw' letters?

- **Response:** "I try to discourage it as it prevents motor 'automaticity,' but in large classes, it is hard to stop every child".

16. What is the impact of learning French and English simultaneously on their handwriting?

- **Response:** "It increases the practice time but can sometimes confuse the pupils regarding the script's specific rules".

17. Do you believe that handwriting is still important in the digital age?

- **Response:** "Yes, it is a vital skill for brain development and academic discipline".

2.6.4 Summary of Results

Through data triangulation, it becomes clear that issues concerning handwriting in Saida are caused by three major categories, which are institutions (large classes), environment (no practice at home), and lack of motor skills (poor grip and posture).

2.7 Conclusion

In conclusion, this chapter has presented a comprehensive analysis of the data collected through questionnaires, a semi-structured interview, and direct classroom observation. The findings consistently point to the same conclusion: handwriting difficulties among third-year primary school pupils in Saida are real, varied, and deeply rooted in a combination of physical,

environmental, and institutional factors. Poor fine motor development, incorrect pencil grip, bad posture, overcrowded classrooms, and insufficient teacher training all emerge as central contributors to these difficulties. Two particularly significant phenomena were identified through observation: the "Ruler Effect," whereby pupils rely on rulers to draw individual letters rather than developing genuine motor automaticity, and the "Speed Race," whereby pupils compete to finish writing tasks quickly at the expense of legibility. These findings confirm the research hypotheses and provide a solid empirical basis for the pedagogical recommendations and strategies proposed in Chapter Three. Crucially, the data also demonstrate that where the learning environment is more conducive — as observed in the smaller classes at Cherifi Mostefa School — teachers are better able to provide individualized corrective feedback and monitor pupils' physical writing habits effectively.

Chapter Three

Suggestions and

Recommendations

- 3.1. Introduction
- 3.2. Discussion of Results in Light of the Hypotheses
- 3.3. Pedagogical Implications
- 3.4. Recommendation 1: Improving the Classroom Environment and Physical Health
- 3.5. Recommendation 2: Integrating Technology in Modern Pedagogy
- 3.6. Suggested Instructional Strategies
- 3.7. Recommendation 4: Multi-Sensory Techniques for Motor Security
- 3.8. Ergonomic Instruction
- 3.9. Guided Practice & Feedback Loop
- 3.10. Overcoming the "Speed Race" Strategy
- 3.11. Summary Table of Techniques
- 3.12. Recommendations to Authorities, Teachers, and Parents Recommendations
- 3.13. Limitations of the Study
- 3.14. Conclusion

3.1. Introduction

The ability to write is the best way to communicate and achieve academic success. In Algerian elementary school, having a good handwriting style is important since it is a result of the cognitive and physical development of the pupil. Nowadays, being a teacher is a complex career, and handwriting must be considered as a basic one. In this chapter, we discuss the analysis of our study results in Saida and ways to deal with problems in writing faced by Pupils.

3.2. Discussion of Results in Light of the Hypotheses

Based on the teachers' questionnaire, It can be seen clearly that most of the primary school teachers agreed that pupils have problems with handwriting, as all of them, 100%, said "yes," and none of them, 0%, said "no." The reasons behind those problems include the lack of practice, crowding classes, and inadequate time for handwriting tasks.

Teachers interact with question 10, which is about **Does the use of technology have an impact on pupils' handwriting skills?**, 70% state yes while 30% state no. The question reveals that technology has a significant impact on pupils' handwriting.

According to teachers, for the question which is about **What are the most common handwriting difficulties your pupils face?** It is observed that 50% of the teachers noted poor formation of letters, 30% mentioned unclear handwriting, and 20% mentioned improper spacing. It can be said that pupils still have problems with the fundamentals of handwriting.

According to parents', for question one which is about **Does your child have difficulties in handwriting?** All the answers showed that most of parents agreed to their kids being affected by handwriting problems because 100% said yes and 0% said no. For the question which is about **How do you describe your child's handwriting?** the results show that 70% of parents describe it as good, 20% as average and 10% as poor.

This variation may be related to parents' personal evaluation compared to actual classroom performance. In regards to the question which is **Does your child complain about writing tasks?** Yes 80% and No 20%, it shows that the majority of Pupils experience problems or difficulties when it comes to writing assignments. As for the question **Does your child practice handwriting**

at home? , there have been responses of always (90%), sometimes (0%) and rarely (10%). It means that writing exercises at home are not always carried out regularly.

From the findings above in addition to the observation concerning the physical activities, it can be noticed that:

√ 75 percent of the pupils exhibited poor posture behavior.

√ 70 percent possessed wrong pencil grip.

√ An absolutely astonishing phenomenon is the "Ruler Effect" where 35 percent of the pupils utilize rulers when writing letters such as l and t.

Hence, this is a definite evidence of lack of "automaticity" and motor security. A very important behavior was noticed by the researcher. It is that pupils start a 'competition' or a 'race' with their friends to see who finishes writing the task first. This behavior may have Hence, this is definite evidence of a lack of "automaticity" and motor security. A very important behavior was also noticed by the researcher: pupils start a competition or a "race" with their friends to see who finishes the writing task first. This behavior — identified in this study as the "Speed Race" — has a direct negative impact on handwriting quality, as pupils prioritize speed over letter formation and spacing. This finding aligns with the results of Question 14 in the interview, where 90% of teachers confirmed that speed is a major cause of poor handwriting. As Graham, Berninger, and Weintraub (1998) noted, automaticity in letter formation is essential before fluency can be developed; without it, pupils focus on task completion rather than quality. Similarly, Rosenblum, Weiss, and Parush (2003) confirmed that motor insecurity and time pressure are key predictors of illegible handwriting in primary school learners.

According to the teachers' interview, which has comprised 17 questions, concerning the interview items, the first question was about **"What are the common handwriting problems?"**, it has been noticed that 90% of teachers agree that pupils face poor letter formation and spacing issues. Besides question two which was about **"The main causes of these problems"**, teachers state that the lack of motor skills and technology are the reasons. Regarding question three about **"The teacher's role"**, 100% of teachers agree that they need to monitor pupils but they find it

difficult because of the overcrowded classes. As for question five about **"Tracing and copying"**, most teachers agree that they use these traditional ways but they are not enough.

Switching to question 11 **"Is the time enough?"** It may be found out that most of teachers think that the time is insufficient and learners need more time for practice. On question number 13 concerning **"Use of rulers"** teachers have confirmed that they try to restrain pupils from doing so, though it is hard, because they are motorically insecure. Regarding question number 14, **"Writing speed"** it turns out that 90% of teachers claim that pupils write very quickly in order to complete their writing tasks quickly, which consequently create horrible handwriting. Concerning question number 16 about **"Special guide for handwriting"** the outcome obtained is 100%, all of the respondents agree upon the importance of special guide for teachers because they lack training.

To sum up, the findings of teachers' questionnaire, parents' questionnaire, classroom observations, and interviews prove that handwriting problems are quite prevalent amongst the third-year primary school Pupils . The major causes of these problems include inadequate practice, overcrowded classes, lack of time, and parental neglect. This implies that improvement in the pupil's handwriting will necessitate joint effort on the part of the teachers, parents, and the education system.

3.3. Pedagogical Implications

Several pedagogical implications can be derived from the results of this study, which have a great significance for the Algerian primary education system, particularly in Saida province. These implications indicate that handwriting is a multifaceted educational activity, and not merely a motoric skill.

3.3.1. The Importance of Early Intervention and "Motor Security"

According to the findings of the observation, 10 percent of the students utilize rulers when writing letters. Pedagogically, this indicates that the pupils do not have "motor security". That is, the teaching techniques used in the first and second grades were not oriented sufficiently towards cultivating the "automaticity" of hand movements. Pedagogically, when a pupil cannot write letters

such as "l" and "t" without using a ruler, he/she will encounter serious problems later on when they have to write rapidly in their examination papers. It means that we should shift from "drawing" to "writing" letters.

3.3.2. The Impact of the "Speed Race" on Learning

Actually, it has been noticed that the learners race to be the first to complete their work. The implication of such a "Speed Race" in pedagogy is that success is associated with speed instead of quality. This is very hazardous in pedagogy. The pedagogic implication here is that the teacher should re-examine the way he rewards his learners. The teacher's praise of the first learner will force the others to continue doing poorly. We have to alter the pedagogic orientation to legibility as the aim of the lesson.

3.3.3. Teacher Training and Professional Development

From teachers' responses, it is remarkable that 85% of the teachers stated that they were not trained for teaching handwriting. There is an enormous educational significance behind this statement: the teacher is practicing "traditional" or "random" teaching techniques because he/she does not have scientific guidelines. It means that handwriting is regarded as a "secondary" lesson in teacher training programs. Pedagogically, a teacher who is unaware of how to fix a "wrong pencil grip" (70% of our respondents) will be unable to assist the learner in improving it.

"Teachers need specific pedagogical knowledge to identify and correct writing difficulties like Dysgraphia in the early years» (UNESCO Education Strategy, 2021)."

3.4. Recommendation 1: Improving the Classroom Environment and Physical Health

From another side, the high percentage of poor posture among the pupils (75%) suggests that the class environment, especially the size of the desk and number of learners, is not good. In terms of pedagogy, it is not possible to teach writing effectively if learners are not comfortable. In overcrowded schools such as Thabeti Senoussi, the "Pedagogical Monitoring" (monitoring all learners) becomes very difficult. It suggests that successful handwriting is closely related to the "Class Size."

3.5. Recommendation 2: Integrating Technology in Modern Pedagogy

In light of the fact that 90% of teachers believe that technology influences handwriting, it becomes necessary for us to recognize the "Digital Challenge" that lies ahead. It is true that technology holds immense importance, but it should not come at the cost of developing fine motor skills. Therefore, it is necessary that the institution continues to be a place where the "Manual Skills" of children are preserved and nurtured.

3.6. Recommendation 3: Suggested Instructional Strategies

According to the results of this study, the following instructional strategies are recommended to address the issues identified in Chapter Two, including the "Ruler Effect," poor posture, and the absence of teacher training. These recommendations are grounded in both the empirical findings of this research and the existing literature on handwriting instruction. As Graham and Harris (2005) emphasize, effective handwriting instruction requires explicit, structured, and multisensory approaches that address both the motor and cognitive dimensions of writing. Similarly, Santangelo and Graham (2016) confirm that strategy-based handwriting instruction significantly improves legibility and writing automaticity in primary school learners. The following strategies are therefore proposed for classroom implementation: about 85% do not benefit from a training).

3.7. Recommendation 4: Multi-Sensory Techniques for Motor Security

From the observation, 35% of students rely on the ruler to write letters because they do not have motor security. The solution is through Multi-sensory techniques. It involves the use of more than one sensory organ. Examples include:

- **Air-Writing:** Drawing the letter in the wide space of air by moving the whole hand to help the brain memorize the motion.
- **Sand Trays:** Students trace letters by drawing them in the sand/flour using their hands.
- **Texture Letters:** Students trace letters from sandpaper/felt letters.

This technique will help students to avoid the use of rulers because their hands will become automatic and flexible.

3.8. Recommendation 5: Ergonomic Instruction

The study revealed that 75% of the learners suffer from poor posture and 70% use an incorrect pencil grip. Based on this result, the researcher recommends the implementation of Explicit Ergonomic Instruction by the teacher. This instruction should be conducted on a daily basis, including:

- **The Sitting Principle:** Teachers must allocate the first five minutes for ensuring that learners' feet are firmly placed on the ground and their backs remain straight while writing.
- **The Pencil Grip:** Instructors must teach the proper pencil grip, which is known as "tripod grip," involving the use of three fingers, as well as correcting learners who excessively grip or improperly position the pen on the desk.
- **Paper Position:** Instructors must teach learners how to position the paper based on their handedness.

"Research shows that the 'Tripod Grip' and a straight back are the foundations of legible writing. Without these, pupils face physical fatigue. (National Handwriting Association, 2019)."

As the National Handwriting Association (2019) suggests, posture is very important. In my observation at Thabeti Senoussi School, I found that 75% of pupils do not follow this rule, which confirms the importance of this reference."

3.9. Recommendation 6: Guided Practice & Feedback Loop

According to the analysis of the teachers' semi-structured interview, 90% of teachers mention that speed is what causes bad handwriting. We recommend that Guided Practice is used to correct this deficiency.

- **Quality Over Quantity:** Pupils must be instructed not to make two pages of copies of any particular lesson but to write five lines of perfect handwriting.
- **Instantaneous Feedback:** "Peer Correction" could be adopted in congested classrooms such as Thabeti Senoussi. Here, pupils could be asked to view other pupil's handwriting in order to identify the correctly formed letter. This would increase engagement.

3.10. Recommendation 7: Overcoming the "Speed Race"

"To solve the problem of pupils racing to finish first, the researcher suggests the 'Slow-Writing Challenge'. Instead of rewarding the first pupil who finishes, teachers should reward the pupil who writes the most 'beautiful' and 'correct' line.

- Self-Evaluation: Pupils should use a green pen to circle their best letter in the sentence. This makes them focus on quality.
- Controlled Timing: The teacher can use a timer and tell pupils: 'Do not finish before 10 minutes.' This forces them to take their time and focus on the movements of their hands. As Graham and Harris (2005) emphasize, reorienting pupils toward quality rather than speed is a fundamental step in developing both legibility and writing confidence. Similarly, Medwell and Wray (2007) found that reducing time pressure during handwriting tasks significantly improved letter formation accuracy among primary learners."

3.11. Recommendation 8: Summary Table of Techniques

The following table highlights some of the techniques which could be used to overcome problems of handwriting in Saida province:

The Problem	Suggested Instructional Strategy	Pedagogical Aim
The Ruler Effect	Multi-sensory Techniques (Sand, Air-writing)	To build "Motor Automacity" and confidence.
Bad Posture (75%)	Daily Ergonomic Check-ups	To ensure physical comfort and health.
Wrong Pencil Grip (70%)	The Tripod Grip Training	To improve control over the pen.
Fast Writing Speed	Guided Practice (Short & Quality tasks)	To reduce mistakes caused by rushing.
Crowded Classes	Peer-Tutoring and Monitoring	To provide feedback to all

		pupils.
Speed Race (Pupils competing to finish first)	Quality Reward System: Rewarding the best-formed letters, not the fastest pupil.	Pupils will value "legibility" over "speed."

In conclusion, these methods are highly significant since they focus on both the psychological and physiological aspects of writing. Through the transition from conventional copying to these dynamic methods, educators will be able to assist Pupils in overcoming their challenges and expressing their intelligence via legible handwriting.

3.12. Recommendations to Authorities, Teachers, and Parents

From the results of the research, some recommendations may be drawn which will benefit the concerned parties.

3.12.1. Recommendations to the Educational Authorities

It is time for the Ministry of Education to understand that handwriting skills are fundamental. • **Training Sessions:** Since 85% of teachers stated that they did not have any special training, there should be more intensive sessions about "Graphomotricity" and detecting motor problems at an early stage.

- **Less Number of pupils in One Class:** According to the difference in classes' sizes between Thabeti Senoussi School and Cherifi Mostefa School, educational authorities should try to decrease the number of pupils in one class, thus enabling the teacher to follow up the writing and the posture of each pupil.

- **Supplying Teachers With a Special Manual:** The request of all the teachers interviewed in favor of a special manual should be taken into consideration by supplying teachers with "A Teacher's Manual for Handwriting."

3.12.2 Recommendations for Primary School Teachers

Teachers are the ones who supervise directly pupils' progress.

- **Ergonomic Checkup Every Day:** Teachers shouldn't begin the writing exercise until checking pupils' posture. As the results show that 75% have poor posture, this should become their daily routine.
- **The Issue with the Rulers:** Teachers should be tolerant but decisive towards those pupils (35%) who use the ruler when writing down letters. They need to encourage them to trust their movement of hands and gain "motor security."
- **Sensory Activities Involved:** In light of this, we strongly recommend to incorporate into their classes sensory activities such as molding letters from play dough and drawing them on a different texture in order to develop pupils' finger muscles.
- **Emphasis Should Be Put:** Teachers are advised to cut short duration of the lesson to copy and pay attention rather to the quality of letters written, especially those pupils who write rapidly (Question 14).

3.12.3 Recommendations for Parents and Families

The domestic environment is the place where most practice takes place.

- **Checking Usage of Electronic Gadgets:** 90% of the teachers consider gadgets to be negatively impacting. It is necessary to restrict using electronic devices like tablets and cell phones and motivate pupil to do their drawing and writing by using pens and paper.
- **Provision of the Appropriate Place for Work:** To develop healthy habits regarding posture, parents need to make sure that the student has a comfortable chair and desk of the appropriate height at home.
- **Additional Practice Exercises:** Additional practice can be done as suggested by the teacher and provided in a domestic workbook as stated in Question 16 in our interview.

3.12.4 Recommendations for Further Studies

Since the present study covered only two schools in Saida, it is recommended that:

- Future studies should consider conducting a "Longitudinal Study" where the progress of the handwriting skills of students from grade one through five will be followed.
- Future studies should compare between the handwriting skills of students in urban and rural settings to find out if there is any change due to the environment.
- Future studies could examine the connection between "Dysgraphia," which means writing disability, and academic achievement in mathematics and Arabic.

3.13. Limitations of the Study

The process of writing this research proved to be a difficult experience for the researcher, who came across many challenges that might have hindered the thoroughness of the study.

- **Time Constraint:** The timeframe given to conduct this research is quite short. Data collection at two different schools (Thabeti Senoussi and Cherifi Mostefa) within the province of Saida in the second semester of the academic year 2025/2026 took a lot of time. More time would have enabled the researcher to adopt some of the proposed strategies and evaluate their effects on pupil's handwriting.
- **Sample Size and Generalization:** The study is conducted on a sample of 40 children and few teachers. Though the results are highly important for both schools, they cannot be generalized to all Algerian primary schools.
- **The Psychological Aspect for Pupils:** While conducting the observation, some pupils seemed to feel "spied on" by the researcher, who could possibly impact their normal writing process. Even though the researcher was trying to remain invisible during the whole process, the presence of the visitor in the class can make a difference sometimes.
- **Difficulties with Gathering Information:** It was rather difficult to move around from school to school within Saida. In addition, some parents were reluctant to answer questions about their Pupils because they were afraid of appearing unintelligent; however, the study confirmed the high level of intelligence of these pupils.

3.14. Conclusion

In conclusion, this chapter has enlightened us about the pedagogical challenges we face in our primary schools. Indeed, the study revealed that poor handwriting was not related to any lack of intelligence but rather stemmed from a variety of physical, environmental, and institutional problems.

The phenomenon known as the "Ruler Effect" and the "Speed Race," observed at Thabeti Senoussi School, confirms that pupils require greater motor security and must be taught at a deliberate, methodical pace. The data from both questionnaires and interviews consistently demonstrated a critical need for structured teacher training in graphomotor instruction, as 85% of the interviewed teachers reported having received no specific preparation in this area.

The proposed pedagogical techniques such as "Slow-Writing Challenge" and "Multi-sensory Techniques" may offer the needed guidelines to change the writing task in classes from a meaningless speed race into a valuable learning experience. In adhering to the recommendations made to authorities, teachers, and parents, we look forward to a bright future wherein each pupil in Saida will learn to write confidently and clearly. Handwriting will remain the primary tool for academic success, and its development is a collective effort that must begin by focusing on the finer aspects of the pupil's hand.

General Conclusion

The present study was motivated by a central research problem: despite the growing importance of English handwriting as a foundational academic skill in Algerian primary schools, third-year pupils in Saida continue to struggle with legibility, letter formation, and motor control. The core questions this research sought to answer were: what are the main difficulties encountered in teaching handwriting to these pupils, what factors lie behind them, and what effective pedagogical solutions can be offered?

The findings of this research confirm that handwriting difficulties among third-year pupils in Saida are both real and multidimensional. Data collected through questionnaires, interviews, and classroom observation consistently revealed that these difficulties do not stem from any intellectual deficit, but rather from a combination of physical, environmental, and institutional factors. Specifically, the study identified poor fine motor development, incorrect pencil grip (70%), bad posture (75%), overcrowded classrooms, and near-total absence of specialized teacher training (85%) as the primary obstacles. Two striking phenomena were documented: the “Ruler Effect,” whereby 35% of observed pupils relied on rulers to form basic letters; and the “Speed Race,” whereby pupils competed to finish writing tasks first at the expense of legibility.

In terms of contributions to the field, this study offers several original insights. First, it provides empirical evidence of the specific handwriting challenges faced by Algerian EFL primary learners — a population that has received limited attention in existing research. Second, it introduces and documents two locally-observed classroom phenomena — the “Ruler Effect” and the “Speed Race” — which had not been previously named or analyzed in the Algerian primary education context. Third, it proposes a set of context-sensitive instructional strategies, including the “Slow-Writing Challenge,” “Multi-Sensory Techniques,” and Ergonomic Instruction, grounded in both empirical findings and established research literature.

This study is not without its limitations. The sample was restricted to two primary schools in Saida, which limits the generalizability of the findings. Time constraints also prevented the researcher from implementing the proposed strategies and measuring their long-term impact. Furthermore, the presence of an observer during classroom sessions may have influenced pupils’ natural writing behavior.

General Conclusion

In light of these limitations, several directions for future research are recommended. Longitudinal studies following pupils from Grade One through Grade Five would provide a fuller picture of how handwriting difficulties evolve. Comparative studies between urban and rural schools could further illuminate the role of the learning environment. Future research could also evaluate the instructional strategies proposed here through experimental designs, and explore the link between dysgraphia and academic achievement. Ultimately, improving handwriting in Algerian primary schools is a collective responsibility. When the right conditions are in place — well-trained teachers, appropriate classroom environments, and consistent home support — pupils are fully capable of developing the legible, confident handwriting that underpins their academic success. It is our sincere hope that this study contributes to meaningful and lasting progress in handwriting education in Saida and beyond.

Bibliography

Bibliography

1-Books

- Nash, R. (1997). *Foreign language education in the elementary school*. Cambridge University Press.

2-Book Sections / Chapters

- Berninger, V. W., & Winn, W. D. (2006). Building writing disabilities into the SAT: Writing is not just an assessment of intelligence but also of working memory. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of Writing Research* (pp. 96–114). The Guilford Press.
- Scardamalia, M., Bereiter, C., & Goelman, H. (1982). The role of production factors in writing ability. In M. Nystrand (Ed.), *What writers know: The language, process, and structure of written communication* (pp. 173-210). Academic Press.

3-Journal Articles

- Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87(1), 49-74.
- Berninger, V. W., Abbott, R. D., Abbott, S. P., Graham, S., & Richards, T. (2002). Writing and reading: Connections between language by hand and language by eye. *Journal of Learning Disabilities*, 35(1), 39-56.
- Bridwell, L. S. (1981). Revising strategies in Macrorie's "Writing on the Wall" and textbook guidelines. *Research in the Teaching of English*, 15(3), 197-207.
- Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3), 363-406.
- Graham, S. (1992). Issues in handwriting instruction. *Focus on Exceptional Children*, 25(2), 1-14.
- Graham, S., Harris, K. R., & Fink, B. (1997). Is handwriting causally related to learning to write? Treatment of handwriting problems in beginning writers. *Journal of Educational Psychology*, 89(4), 634-642.
- Graham, S., & Weintraub, N. (1996). A review of handwriting research: Progress and prospects from 1980 to 1994. *Educational Psychology Review*, 8(1), 7-87.
- James, K. H., & Engelhardt, L. (2012). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*, 1(1), 32-42.

- Jones, D., & Christensen, C. A. (1999). Relationship between automaticity in handwriting and literacy achievement in primary school children. *Journal of Educational Psychology*, 91(1), 44-49.
- Maeland, A. F. (1992). Handwriting problems of primary school children and visual-spatial awareness. *Journal of Learning Disabilities*, 25(1), 14-22.
- McCarney, D., Peters, L., Jackson, S., Thomas, M., & Kirby, A. (2013). Does issues with handwriting mask for intelligence? *AUK Journal of Early Childhood*, 14(2), 101-115.
- McCutchen, D. (1995). Cognitive processes in children's writing: Developmental and individual differences. *Issues in Education*, 1(2), 123-160.
- Rosenblum, S. (2008). Development, reliability, and validity of the Handwriting Proficiency Screening Questionnaire (HPSQ). *The American Journal of Occupational Therapy*, 62(3), 298-307.
- Rosenblum, S., Weiss, P. L., & Parush, S. (2003). Product and process evaluation of handwriting difficulties: A review. *Educational Psychology Review*, 15(1), 41-81.
- Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review*, 28(2), 225-265.
- Smits-Engelsman, B. C., Niemeijer, A. S., & van Galen, G. P. (2001). Fine motor deficiencies in children with developmental coordination disorder and learning disabilities. *Human Movement Science*, 20(1-2), 161-194.
- Taylor, J., & Huffty, K. (2013). The biomechanics of early penmanship: Pencil grips, ergonomics, and fine motor stability in cursive writing. *Journal of Educational Paediatrics*, 19(1), 40-52.
- Tseng, M. H., & Murray, E. A. (1994). Differences in perceptual-motor measures in children with good and poor handwriting. *The American Journal of Occupational Therapy*, 48(4), 349-358.
- Van Galen, G. P. (1991). Handwriting as a motor task: Experimentation, psychological models, and simulation. *Human Movement Science*, 10(2-3), 165-191.
- Weintraub, N., & Graham, S. (2000). The contribution of visual-motor integration, visual perception, and motor coordination to handwriting performance. *Journal of Educational Psychology*, 92(4), 625-635.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.

- Graham, S., Berninger, V. W., Abbott, R. D., Abbott, S. P., & Whitaker, D. (1997). Role of mechanics in composing of elementary school students: A new methodological approach. *Journal of Educational Psychology*, 89(1), 170-182.
- Graham, S., & Harris, K. R. (2005). Improving the writing performance of young struggling writers: Theoretical and programmatic research from the center on accelerating student learning. *The Journal of Special Education*, 39(1), 19-33.
- Medwell, J., & Wray, D. (2007). Handwriting: What do we know and what do we need to know? *Literacy*, 41(1), 10-15.

4-Theses / Dissertations

- Chabana, A. (2021). The impact of pedagogical training and diagnostic assessment on writing mechanics among primary school learners (Unpublished doctoral dissertation). University of Mostaganem.
- Mebarki, A. (2021). The impact of poor handwriting on the readability of pupils' written expression: A case study of primary schools in Biskra (Master's thesis, University of Biskra).
- Zellagui, N. (2017). Investigating handwriting difficulties, letter positioning, and spacing issues among primary school children (Doctoral dissertation, University of Batna 2).

5-Official Documents

- Ministry of National Education. (2016). The Algerian National Curriculum Framework and Guidance Documents for Primary Education. Algiers: MNE.

Appendices

Parents Questionnaire on Pupils' Handwriting

Dear Parent,

This questionnaire aims to understand pupils' handwriting difficulties and how parents support your children at home. Your answers will be used only for research purposes.

Section One: Personal Information

1. Gender:
☐ Male ☐ Female
2. Your relationship to the child:
☐ Father ☐ Mother ☐ Other
3. Educational level:
☐ Primary
☐ Middle school
☐ Secondary
☐ University

Section Two: Child's Handwriting

4. How would you describe your child's handwriting?
☐ Good
☐ Average
☐ Poor
5. Does your child have difficulties in handwriting?
☐ Yes ☐ No
6. What kind of difficulties does your child face?
☐ Poor letter formation
☐ Slow writing
☐ Unclear handwriting

☐ Spacing problems

7. Does your child complain about writing tasks?

☐ Yes ☐ No

Section Three: Practice and Support

8. Does your child practice handwriting at home?

☐ Always ☐ Sometimes ☐ Rarely

9. How much time does your child spend practicing writing at home?

☐ Less than 30 minutes

☐ 30–60 minutes

☐ More than 1 hour

10. Do you help your child with handwriting practice?

☐ Yes ☐ No

11. If yes, how do you help?

.....

12. Do you think the school provides enough support for handwriting?

☐ Yes ☐ No

Section Four: Importance and Suggestions

13. Do you think handwriting is important for your child's learning?

☐ Yes ☐ No

14. Do you think technology (phones/tablets) affects your child's handwriting?

☐ Yes ☐ No

15. In your opinion, what can help improve your child's handwriting?
.....
...

Questionnaire on Teaching Handwriting to Third Year Primary School Pupils

Dear Teacher,

This questionnaire seeks to investigate the challenges that are encountered when teaching handwriting to third year primary school pupils. Your responses will be used for the purpose of research.

Section One: personal Information

1. Gender:

☐ Male

☐ Female

2. Years of teaching experience:

☐ 1–5 years

☐ 6–10 years

☐ More than 10 years

3.. What Academic qualifications do you hold in English ?

☐ License degree

☐ Master degree

☐ Doctorate degree

Section Two: Handwriting Teaching and Difficulties

4. have you undergone any training about teaching handwriting ?

☐ Yes ☐ No

If yes, how often?

☐ Once. ☐ Occasionally ☐ Frequently

5. Do your pupils experience difficulties in handwriting?

☐ Yes ☐ No

6. What are the most common handwriting difficulties your pupils face?

☐ Poor letter formation

- ☐ Incorrect spacing
- ☐ Slow writing speed
- ☐ Unclear handwriting
- ☐ Mixing upper and lower case letters

7. ☐ Yes ☐ No

Do large class sizes affect your teaching of handwriting effectively?

8. what strategies do you adopt to overcome these difficulties?

.....
.....

9. What techniques do you use to help pupils improve their handwriting?

.....
.....

10. skills of your pupils?

☐ Yes ☐ No

Does the use of technology have an impact on the handwriting

11. home?

☐ Yes ☐ No

Do the parents support their pupils in practicing handwriting at

12. Do you apply special techniques for the improvement of your pupils' handwriting skills?

☐ Yes ☐ No

If yes, please specify: _____

13. According to your opinion, what could be the solution for the improvement of handwriting teaching?

.....
.....

14. Do you think that learning French and English at the same time helps pupils improve their handwriting? How?

.....

APPENDIX of Teachers' Interviews

1. Can you describe your experience in teaching handwriting to third-year primary pupils?
2. Have you received any training on teaching handwriting?

3. How would you describe your pupils' level in handwriting?
4. What are the most frequent handwriting errors your pupils face?
5. In your opinion, what are the main causes of these difficulties?
6. How do you usually deal with pupils who have handwriting problems?
7. Do you think class size affects handwriting teaching? Why?
8. What strategies do you use to help pupils overcome handwriting difficulties?
9. What techniques do you use to improve pupils' handwriting?
10. What suggestions would you give to improve handwriting teaching?
11. How do pupils' sitting postures affect their writing?
12. Do you notice a difference between pupils who practice at home and those who don't?
13. Do you find the English 3PS textbook helpful for handwriting?
14. Does the use of pencils vs. pens make a difference in the 3rd year?
15. How do you handle pupils who use rulers to 'draw' letters?
16. What is the impact of learning French and English simultaneously on their handwriting?
17. Do you believe that handwriting is still important in the digital age?

thesis final chabani.docx

by Djamel Eddine Senouci

Submission date: 08-Jun-2026 06:03PM (UTC+0300)

Submission ID: 2903572471

File name: thesis_final_chabani.docx (499.46K)

Word count: 20512

Character count: 116931

thesis final chabani.docx

ORIGINALITY REPORT

5%	5%	1%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	dspace.univ-tlemcen.dz Internet Source	<1 %
2	www.coursehero.com Internet Source	<1 %
3	texasreadingteacher.com Internet Source	<1 %
4	journals.ku.edu Internet Source	<1 %
5	archives.univ-biskra.dz Internet Source	<1 %
6	ot.eku.edu Internet Source	<1 %
7	Submitted to Governors State University Student Paper	<1 %
8	archive.org Internet Source	<1 %
9	dokumen.pub Internet Source	<1 %
10	www.frontiersin.org Internet Source	<1 %
11	dspace.univ-ouargla.dz Internet Source	<1 %

12	Submitted to Gulf College Oman Student Paper	<1 %
13	www.univ-bejaia.dz Internet Source	<1 %
14	ulspace.ul.ac.za Internet Source	<1 %
15	Submitted to Republic of the Maldives Student Paper	<1 %
16	text.123docz.net Internet Source	<1 %
17	www.ijsrp.org Internet Source	<1 %
18	Submitted to University of West Georgia Student Paper	<1 %
19	erepository.uonbi.ac.ke Internet Source	<1 %
20	repository.library.fresnostate.edu Internet Source	<1 %
21	dspace.univ-bba.dz Internet Source	<1 %
22	www.theseus.fi Internet Source	<1 %
23	Submitted to Southville International School and Colleges Student Paper	<1 %
24	adminbupfe.univ-saida.dz Internet Source	<1 %

25	clarkcondon.com Internet Source	<1 %
26	www.slideshare.net Internet Source	<1 %
27	Rosemary Luckin, Sadhana Puntambekar, Peter Goodyear, Barbara Grabowski, Joshua Underwood, Niall Winters. "Handbook of Design in Educational Technology", Routledge, 2013 Publication	<1 %
28	Submitted to University of the Western Cape Student Paper	<1 %
29	docs.google.com Internet Source	<1 %
30	ir-library.ku.ac.ke Internet Source	<1 %
31	pt.slideshare.net Internet Source	<1 %
32	www.scipublications.com Internet Source	<1 %
33	www.studymode.com Internet Source	<1 %
34	irbackend.kiu.ac.ug Internet Source	<1 %
35	Submitted to Study Group Australia Student Paper	<1 %
36	alhikmahuniversity.edu.ng Internet Source	<1 %

37	journalppw.com Internet Source	<1 %
38	wiredspace.wits.ac.za Internet Source	<1 %
39	Fred Spooner, Bob Algozzine, Nancy L. Waldron. "Handbook of Effective Inclusive Elementary Schools - Research and Practice 2nd Edition", Routledge, 2021 Publication	<1 %
40	digitum.um.es Internet Source	<1 %
41	etd.aau.edu.et Internet Source	<1 %
42	fau.digital.flvc.org Internet Source	<1 %
43	files01.core.ac.uk Internet Source	<1 %
44	ijsra.net Internet Source	<1 %
45	mobile.repository.ubn.ru.nl Internet Source	<1 %
46	repository.ush.sd:8080 Internet Source	<1 %
47	siteresources.worldbank.org Internet Source	<1 %
48	thesis.univ-biskra.dz Internet Source	<1 %
	www.nifdi.org	

49	Internet Source	<1 %
50	www.schools.utah.gov Internet Source	<1 %
51	Kathy A. Mills, Amy Stornaiuolo, Anna Smith, Pandya Jessica Zacher. "Handbook of Writing, Literacies, and Education in Digital Cultures", Routledge, 2017 Publication	<1 %
52	Richard E. Mayer, Patricia A. Alexander. "Handbook of Research on Learning and Instruction", Routledge, 2016 Publication	<1 %
53	core.ac.uk Internet Source	<1 %
54	d-nb.info Internet Source	<1 %
55	dc.msvu.ca:8080 Internet Source	<1 %
56	dspace.univ-jijel.dz:8080 Internet Source	<1 %
57	e.bangor.ac.uk Internet Source	<1 %
58	ir.mksu.ac.ke Internet Source	<1 %
59	link.springer.com Internet Source	<1 %
60	mafiadoc.com Internet Source	<1 %

61	nova.newcastle.edu.au Internet Source	<1 %
62	onlinelibrary.wiley.com Internet Source	<1 %
63	repositorio.ulisboa.pt Internet Source	<1 %
64	repository.lcu.edu.ng Internet Source	<1 %
65	vdoc.pub Internet Source	<1 %
66	www.art.eurekajournals.com Internet Source	<1 %
67	www.lier.org.au Internet Source	<1 %
68	www.vivostreaming.com Internet Source	<1 %
69	Rosalind Horowitz. "The Routledge International Handbook of Research on Writing - Second Edition", Routledge, 2023 Publication	<1 %

Exclude quotes Off
Exclude bibliography On

Exclude matches Off

