

POOR HANDWRITING AND ITS KNOCK-ON EFFECTS ON EFL LEARNERS' ACADEMIC PERFORMANCE

HASAN MOHAMMED SALEH JAASHAN

Associate Professor, King Khalid University, Saudi Arabia & Sanaa University, Yemen.

Email: hmsaleeh@kku.edu.sa

TANZINA HALIM*

Lecturer, King Khalid University, Saudi Arabia. *Corresponding Author Email: thlem@kku.edu.sa

SHANJIDA HALIM

Lecturer, King Khalid University, Saudi Arabia. Email: shalem@kku.edu.sa

MOHAMMED AHMED HASAN ALWARD

Assistant Professor, King Khalid University, Saudi Arabia & Sanaa University, Yemen.

Email: alward1971@gmail.com

Abstract

Handwriting is an essential and indispensable skill in learning a language. Its importance lies in its being the product upon which the EFL learners' linguistic performance can be judged and evaluated. Students' poor handwriting negatively affects their overall academic achievement. This study investigates the knock-on effects of students' poor handwriting on their performance in the assessment methods of academic courses. It also aims to know teachers' impressions and perceptions about their students' poor handwriting and its relation to their low academic performance. In this study, (N=64) EFL learners (male and female) from levels 2,3,7, and 8 studying the courses (*Grammar 2, Writing 3, Research Methodology, and Preparation for International Tests*) at King Khalid University, were selected and dictated a text for writing on specific papers designed for writing the English letters and words. The researchers use Smith JC's (2010) six criteria to evaluate learners' handwriting. The results substantiate that those learners whose handwriting is unsatisfactory scored low marks whereas those with good handwriting scored high marks in exams. Based on the findings, the study concludes with recommendations on how students can improve their handwriting to score satisfactory marks in all courses.

Keywords: Academic achievement, Good handwriting, Knock-on-effects, Learnable/teachable skill, Poor handwriting

1. INTRODUCTION

Recent researches prove that our handwriting/graphology does not originate from the hand, as we might think, but from the brain. The brain (nerve system) sends messages to the hand's muscles and fingers to perform the act of writing. Therefore, what appears on the page while writing is highly influenced by the state of the brain (Conway, 2016). So, the state of the brain at the time of writing directly influences what appears on the page. Such interconnection makes individuals different in their handwriting. In other words, handwriting is like a thumbprint through which the identity of anyone can be recognized.

Writing and speaking are productive skills and are results from the cumulative and continuous input of listening and reading skills. The more they are well practiced, the more are chances of improved language learning. When learning a second language,

writing is one aspect of language that has always posed problems in the other language skills. (Yosuf & et al., 2019). Writing skill is prioritized over other skills because it reflects the learners' real progression in gaining language. Therefore, neat handwriting results from the massive practice the learners do over a long time. Psychologically, it gives a good impression to the teachers about their students. Consequently, when checking the exam papers, the teachers feel comfortable reading the answers written clearly and neatly. Students with this advantage score high marks in exams. However, the students who pay less attention to their handwriting scoreless marks because they cannot convey their ideas with clear and intelligible handwriting. This study proves this phenomenon practically. EFL learners who care about the handwriting's legibility, letter formation, uniformity of letter size, spelling correction, spacing between letters and words, and alignment of writing lines generally perform well in exams, and they gain good marks, and the opposite is correct with their counterparts. i.e., those EFL learners whose handwriting is not neat and clean generally score low marks, specifically in subjective exam questions.

1.1 Theoretical Framework

In this technological era, we produce text in various ways, such as typewriting (keyboarding skills), digital writing (writing with electronic writing devices), and the use of speech-to-text software. Digital devices are increasingly replacing traditional writing by hand. Most adults write using a keyboard and computer. (Longcamp et al., 2005, 2006, Kiefer et al., 2015). Therefore, the amount of time spent writing by hand has been reduced as learning activities are increasingly relying upon digital devices. (Mueller & Oppenheimer, 2014; Vinci-Booher et al., 2016).

However, the contradictory views pointed out by some researchers show the negative effects of relying on digital devices for writing. Compared to typewriting training, handwriting training has not only been found to improve spelling accuracy (Cunningham & Stanovich, 1990) and better memory (Longcamp et al., 2006; Smoker et al., 2009; Mueller & Oppenheimer, 2014) but also improved letter recognition (Longcamp et al., 2005, 2008). These benefits have been found in traditional handwriting using an ink pen and handwriting using a digital pen (Osugi et al., 2019). These results suggest that the involvement of intricate hand movements and shaping of each letter may be beneficial in several ways. Even so, a study by Mueller and Oppenheimer (2014) revealed that taking notes in the traditional way is more beneficial than the use of digital devices. They found that taking notes by hand increases the retention of factual content and conceptual understanding. Note-taking also encourages a more cognitive process, thereby contributing to effective learning. In a study by Van der Meer & Van Der Weel (2017), it is stated that children must learn how to coordinate their hand movements accurately and produce the shape of each letter which may take several years of practice. Mangen et al. (2015) found that handwriting helped with word retrieval more than typewriting on conventional and touch keyboards. Another study comparing learning through tablets with the traditional method suggested that not employing the latter might deprive children of fine motor skills (Ly, 2019).

Moreover, in schools, and many colleges and universities, academic exams are not online. Students still must use pen and paper to complete their exams. This brings us to the fact that no matter how frequently students rely on digital devices inside or outside the classroom, they must use pen and paper to complete their academic exams. Therefore, though the present generation has switched to digital devices for writing, the importance of handwriting cannot be denied.

1.2 Research Objectives

The research has two main objectives:

1. Investigating the knock-on effects of students' poor handwriting on their performance in the assessment methods of academic courses.
2. Investigating the teachers' impressions and perceptions about their students' poor handwriting and its relation to their low academic performance.

1.3 Hypothesis

There is a significant relationship between students' handwriting and scoring grades. Students with poor handwriting score lower marks in exams than those with legible and satisfactory handwriting.

1.4 Research Question

The study addresses the following question:

Does students' poor handwriting negatively affect their overall academic assessment methods performances?

1.5 Significance of the Study

This study inspires both EFL teachers and students to focus on the practice of handwriting regularly and constantly in different academic activities in the classroom. It is a well-known fact that students must write using pen and paper in school, college, or university exams. It is mandatory to use pens for completing these exams. Studies show that improving students' handwriting would positively reflect their performances in other language learning skills. Therefore, this study focuses on the negative impacts of students' poor handwriting on their academic achievement. It compares their performance in dictation (the text which was dictated to them) with their performance in course grades to know their relation. In other words, the researchers justify the assumption that students with poor handwriting scored lower marks in exams than their counterparts. It also contributes to the collaborative and important role of the teachers in improving students' handwriting by allotting time for EFL learners to practice handwriting regularly.

2. LITERATURE REVIEW

Among the four primary skills of learning a language, writing, as a productive skill, is the most important one the learner should heavily practice and command. Despite a massive increase in computer use, handwriting remains an essential and indispensable

daily learning skill. Its importance lies in its being the product upon which the EFL learners' linguistic performance can be judged and evaluated. Some English teachers think that handwriting is redundant and not worth spending time teaching it anymore. Despite such negligence in the educational process, handwriting remains an essential and demanding skill for EFL learners (Gholaminejad et al., 2013; Jabali, 2018; Du, 2020;). It is also a required skill in the educational context. It is used to take important notes while listening to teachers in the classroom and writing academic compositions, essays, and reports (Hyland, 2013). In their study, Javed et al. (2013) show that handwriting is one of the four skills that should be highly focused and drilled.

Being proficient in writing is a big challenge even for native English speakers due to no one-to-one correspondence between spoken and written forms. Many skills and mental faculties work simultaneously when practicing writing: motor planning, cognition, visual motor skills, and perceptual-motor skills (Abbott & et al., 2010; Childress, 2011; Bosga & et al., 2015). It also requires kinesthetic and tactile abilities to control writing tools (Ahirwal1 & Etal, 2021; Clark, 2011). Therefore, writing is not a talent, as many think but a learnable/ teachable skill. Anyone can master it with continuous and massive practice and constant and wholehearted support (Kroll, 2003). Additional research evidence also illustrates handwriting's positive impact on performance across all academic learning skills, such as reading and writing (Graham & Weintraub, 1996; Berninger et al., 1992; James & Engelhardt, 2012; Cameron et al., 2012; McHale & Cermak, 1992). When handwriting becomes automatic (effortless), writers can focus on composing and writing essays (Graham & Weintraub, 1992; Berninger et al., 1992). Handwriting also improves letter-recognition skills in reading and language recognition itself (James & Engelhardt, 2012). Handwriting difficulties can also be related statistically to academic failure (Graham et al., 2000), considering that handwriting tasks account for 30%–60% of school activities in elementary school (McHale & Cermak, 1992).

In this case, teachers play a significant role in establishing the atmosphere for students to practice writing and create a suitable atmosphere inside the classroom to make students more open and participate in many writing projects (Chapman, 2003). Students learn to write with fewer spelling errors, appropriate grammar structure, and good coherence. Sassoon and Briem (2014) state that more attention should be given to teaching handwriting to improve writing and other skills. Students' handwriting improves when they practice and are given multiple regular writing opportunities. It is agreed that many writing activities increase students' critical-thinking skills, which can be applied to other learning tasks (Calkins, 1994). Therefore, it is highly recommended to incorporate writing skills into the EFL teaching syllabus because it supports and solidifies what students learn through other skills, allows them to use language in context, and apply them in writing activities (Raimes, 1991).

When we want EFL learners to convey ideas through writing with a pen, their handwriting must conform to punctuation and spelling norms. We want the language they produce to be intelligible to them. At the same time, handwriting (formatting, margins) should be easy for readers to comprehend. Using pens to put words down on paper is a complex task, but it uses complicated orthographic processes to form letters,

words, and sentences accurately. There are brilliant students in reading and speaking, but they experience problems with handwriting. They write with many errors in spelling and punctuation. They do not suffer from dysgraphia but lack good and rigorous handwriting practice. With such activities, students' written works result in inconsistent use of upper- and lower-case letters, misused punctuations, poor spelling, and inability to keep letters on lines. Generally, writing by hand has a positive effect on what we write. Interestingly, creative writers and poets prefer writing by hand because they think creativity results from the connection between hand and mind. Also, handwriting is like a thumb stamp that shows an individual's identity (Ahirwal1. S & Etal (2021).

Undoubtedly, handwriting is dwindling dramatically in front of the ever-increasing technological advancements and the use of computers in all fields of life. Because of that, students think there is no importance in fully mastering the correct way of writing letters, words, and sentences. They need to click on the keyboard and take a shortcut to find the spelling of the words they want without understanding the complicated processes involved in handwriting (Purcell et al., 2013). In the United States, handwriting had importance and was taught in schools as a separate subject, and children used to receive a separate grade for this 'subject' (Blazer, 2010). However, over the last decade, the importance of handwriting in education has diminished significantly. If students are trained on the proper aspects of handwriting, these technological tools will become the main reason behind learners' poor handwriting (Dinehart, 2015). Suto (2021) did a study on 633 university teachers who unanimously stated that handwriting skill is considered at the top of the problems of university students. As a skill, handwriting is at the stake of becoming obsolete. To save it, there is a cogent argument in favor of giving importance to handwriting skills alongside reading and speaking (Florey, 2009). Lacking rigorous handwriting practice makes students' handwriting challenging to read. It results in the following handwriting problems:

1. Students get confused with writing *n, u, y, d, b, p*, and so on.
2. They start writing letters in the wrong direction, so they need help with joining up writing.
3. They have trouble controlling the pen and keeping lines parallel.
4. They need more writing consistency: their writing at the top of the page differs from how they write at the bottom.
5. Some students' letters are too large or too small.
6. They are unsure of their writing and cross out words/phrases or sentences, making their writing illegible.

In their book, Sassoon and Briem (2014) recommend that students do a lot of hard work to improve their handwriting skills because it is so much the product of their habits and nature. Therefore, a deliberate, sustained effort is needed to make it better and understandable.

To find out the answer to the question if regular writing by hand help learners to remember and fix ideas, much research has been done on the educational spectrum

with very young children and with college/university students to answer this question. They believe that handwriting has a positive impact on other cognitive skills. It develops thinking/cognition and helps fix ideas in the learner's mind (memory). James and Engelhardt (2012) conducted a study using resonance imaging technology with four- and five-year-old children to observe the effects on brain activation of children engaging in various writing-like activities. They observed that the areas of children's brains previously associated with reading were activated when they wrote letters to a much greater degree. Shibata and Omura (2018) concluded that handwriting is highly preferred over typing when people take notes while reading documents or listening to lectures. With the experiments they did, they concluded that the cognitive load of handwriting was smaller than that of typing. They also said that typing interferes with memorization more than handwriting. This indicates that handwriting has a strong advantage in keeping information without interfering with other cognitive activities regardless of typing skills.

Dinehart and Manfra (2013) conducted a study on more than 3000 young children and examined the links between fine motor skills (such as weaving string, building with blocks, lacing beads, and cutting with scissors) and some fine motor writing tasks, such as (copying numbers, letters, and shapes, and drawing simple objects such as houses and people) and their academic achievement two years after starting school. The results suggested that fine motor skills have some link with academic achievements. However, compared to fine motor writing skills, the latter was consistently a stronger predictor of reading and mathematics achievement. Mueller and Oppenheimer (2014) also found that students of college/ university who take notes on lectures using handwriting remember the idea they listen to in the lectures more than those who use laptops to take notes. Similarly, critics of computers in the classroom have found computer use to negatively impact course grades (Patterson and Patterson, 2017), lower class performance (Fried, 2008), and be distracting. In another study, Shibata and Omura (2018) display that when using handwriting regularly, learners can memorize words, write something easily, start writing quickly, take notes while listening to other people's speech, and write anything without hesitation.

3. METHODOLOGY

3.1 Participants

In this study, the researchers sent a questionnaire to all teachers in the English Department who have experience of teaching English for more than five years. (N=22) teachers participated in the study.

Table 1: Teacher participants

Gender	Percentage	Teaching experience
Males	45.45	5 years and above
Females	54.54	5 years and above

Table 1 shows the percentages of teachers who participated. Among the 22 teachers, 10 were males (45.45%), and 12 were females (54.54%). All had teaching experience of more than 5 years.

Table 2: Student participants

Gender	Percentage	Age range	L1	Period of learning English
Males	53.12	18-22	Arabic	5 years and above
Females	46.87	18-22	Arabic	5 years and above

Table 2 shows that among the 64 EFL learners, 34 (53.12 %) were males, whereas 30 (46.87%) were females. They all were enrolled in the B.A. program in English at the Faculty of Languages & Translation at King Khalid University in Saudi Arabia. Their ages ranged from 18 to 22 years. They had been learning English for over 5 years, and their L1 was Arabic. Those students studied the courses Grammar 2, Writing 3, Research Methods, and Preparation for International Tests in levels 2,3, 7, and 8. These four courses were selected randomly out of the 42 courses taught in the department.

3.2 Instruments

A questionnaire consisting of 19 closed items was administered to the EFL teachers. All ordinal variables in the questionnaire were prepared on a 5-point Likert Scale, starting from strongly disagree to strongly agree. The questionnaire was based on the observations and experiences of EFL teachers who teach learners at the tertiary level. The researchers compiled the questionnaires with reference to the pre-existing literature. They were valid, as they were judged by five EFL experts in the Saudi context and university staff. Proper modifications were done due to their comments. Some changes were applied in the survey to suit the Saudi EFL context.

As for the students, a text titled *Mother's Day* was chosen and all the students were dictated the text in class. The researchers selected the text considering the language and its suitability to the Saudi context.

3.3 Data collection procedure

To support the study's claim and get authentic results, a questionnaire was sent to all teachers in the English Program (male and female) through Google. Docs. Within two weeks, the data was collected. The study was conducted in the second semester of 2022.

For the students, the purpose of choosing the same text for everyone was to collect samples of their handwriting on a specific text designed for writing English letters and words. The text was read out two times to ensure that they could keep pace with the dictation flow and to ensure the readability of the students' handwriting. The samples were collected from the students to compare them to their scores in the courses they were studying, such as Grammar-2, Writing 3, Research Methods, and Preparation for International Tests.

3.4 Limitations of the Study

The study has some limitations. In this study, only 22 EFL teachers and 64 EFL students participated. Moreover, the study was conducted at only one university in Saudi Arabia. If the participants had been more and the study had been conducted in other universities, the results might have been more valid and reliable for generalization.

3.5 Ethical Consideration

The consent of the participants in the concerned courses was taken orally. They were assured their names would be kept anonymous and the researchers would maintain confidentiality. The data collected would be used only for research purposes and analysis. Therefore, there would be no pressure on any participants who were unwilling to participate.

3.6 Practical Study

In this study, Smith's (2010) six characteristics have been adopted to evaluate students' handwriting performance: *handwriting legibility, letter formation, letter size uniformity, spelling correction, spacing between letters and words, and alignment of writing lines*. As shown below, the evaluation criteria for each characteristic are based on three main categories: *highly satisfactory, satisfactory, and not satisfactory (H.S., S, and N.S.)*, respectively.

The maximum score for all these exams is 100. The columns on the right of the boxes include students' grades in the exams of their courses. *S.W.* stands for all semester's work (quizzes, assignments, and mid-term exams), *F* stands for the final exam, and *T* stands for the total grades. 64 EFL male and female learners from different levels who were studying the courses *Grammar 2, Writing 3, Research Methods, and Preparation for International Test (levels 2, 3, 7, and 8)* were selected and dictated a text.

The researchers compared the learners' performance in handwriting according to the six characteristics with their overall grades achievements in the courses to know the knock-on-effects of their handwriting on their performance in the courses' exams.

The study practically runs through two main domains:

- I. Analyzing the students' performances in handwriting and comparing them with the grades they scored in the courses under study.
- II. Analyzing teachers' questionnaires to know their impression of their students' poor performance in handwriting and its knock-on effects on their achievements in exams.

I. Analyzing the students’ performances in handwriting and comparing them with the grades they scored in the course(s) under study

1. Grammar (2)

Table 3

	Letter formation			Uniformity of letter size			Spelling mistakes			Spacing between letters and words			Alignment of lines of writing			Exams result (Term works+ final exam+ total)		
	H.S	S	N.S	H.S	S	N.S.	H.S	S	N.S	H.S	S	N.S	H.S	S	N.S	S.W	F	T
1		√			√				√			√			√	33	34	67
2		√			√			√		√				√		47	43	90
3		√			√				√			√		√		46	40	86
4			√			√			√			√		√		15	6	21
5			√			√			√			√		√		29	34	63
6	√			√				√		√			√			47	50	97
7		√			√			√			√			√		40	35	75
8		√		√				√			√			√		45	46	91
9			√			√			√			√		√		8	2	10
10			√			√			√			√		√		29	38	67
11		√			√				√			√		√		30	32	62
12		√			√			√			√			√		40	45	85
13	√			√				√			√			√		44	46	90
14			√			√			√			√		√		34	26	60
15			√			√			√			√		√		38	42	80
16			√		√				√			√		√		32	30	62
17			√		√				√			√		√		40	45	85
18	√			√				√			√			√		44	46	90

Data Description

The students' performance in Grammar-2 shows that those who scored low marks in the exams perform unsatisfactorily in handwriting in most evaluation criteria. On the other hand, the students with a satisfactory handwriting level scored 85 and above marks in the course. However, it is noted that there are some students whose handwriting is unsatisfactory, but they scored high marks in the exams (see No. 3, 8, 15, 17, and 18). After scrutinizing, it is found that the exam's items in Grammar-2 are objective questions (*Matching, True or false, choosing the correct options and underlining, etc.*). There are no subjective questions requiring students to write long sentences. They tick the correct answers. Therefore, their marks in exams are generally high, although their handwriting is poor. This goes with the idea that there are students who are good in other skills (listening, speaking) but experience handwriting problems. They write with many errors in spelling and punctuation. They lack sufficient and rigorous handwriting practice.

2. Writing - 3

Table 4

	Handwriting legibility			Letter formation			Uniformity of letter size			Spelling Mistakes			Spacing between letters and words			Alignment of lines of writing			Exams' result (Term works+ final exam+ total)		
	H.S	S	N.S	H.S	S	NS	H.S	S	NS	HS	S	N.S	H.S	S	NS	HS	S	NS	S.W	F	T
1		√			√			√			√		√				√		30	40	77
2	√			√			√				√		√			√			45	47	92
3	√			√				√			√			√		√			44	46	90
4		√			√			√			√		√				√		31	39	70
5		√			√		√				√			√			√		31	41	72
6		√			√			√			√			√			√		33	34	77
7		√		√			√					√		√			√		28	39	67
8			√			√			√			√		√			√		19	21	40
9			√			√			√			√			√			√	6	10	16
10			√			√			√			√		√			√		29	13	42
11			√			√			√			√		√			√		16	18	34
12		√			√			√			√		√			√			43	34	77
13			√			√			√			√			√			√	10	0	10
14		√			√		√				√			√			√		31	44	75
15	√			√				√			√			√			√		48	42	90
16			√			√			√			√		√			√		19	19	38
17			√			√			√			√			√		√		13	26	39

Data Description

Since the course Writing 3 relies on handwriting, there is an existing correlation between learners' handwriting and their grades in the exams. After analyzing the text dictated to students, it is observed that the students whose handwriting is highly satisfactory scored high marks in the exams (see students 2, 3, 6, 14, and 15). On the other hand, those whose handwriting is unsatisfactory (see students 8,9,10,11,13,16, and 17) scored less marks in the exams. This goes with our assumption that poor handwriting has knock-on effects on students' overall academic performance in Writing-3.

3. Research Methods

Table 5

	Handwriting legibility			Letter formation			Uniformity of letter size			Spelling			Spacing between letters and words			Alignment of lines of writing			Exams' result (Term works+ final exam+ total)		
	H.S.	S	NS	H.S	S	NS	HS	S	NS	HS	S	NS	HS	S	NS	HS	S	NS	S.W	F	T
1	√				√			√			√		√				√		43	45	80
2			√			√			√			√			√		√		17	20	37
3		√				√		√			√			√			√		42	30	72
4			√		√			√			√			√			√		35	25	60
5	√			√				√			√			√			√		45	40	85
6			√			√			√		√			√			√		33	16	49
7			√			√		√			√			√			√		24	36	60
8		√				√			√			√		√		√			27	33	60
9		√				√			√			√	√						34	39	73
10	√				√	√				√			√				√		47	43	90
11		√				√			√			√		√			√		31	29	60
12		√				√			√			√		√		√			35	25	60
13			√			√				√		√		√			√		35	25	60
14	√			√				√			√			√			√		39	31	70
15	√			√			√				√		√				√		43	42	85
16		√				√			√			√		√			√		30	30	60
17		√				√			√			√		√			√		38	37	75
18		√				√			√			√					√		34	26	60

Date Description

Research methods is a 7th-level course. Students complete the course in one semester in the program. It was expected that all students should have scored a satisfactory level in dictation. However, it is noted that those students whose handwriting is poor got less marks in the Research Methods exams. Out of 18 students, only 7 did well in the handwriting and exams. Their marks are between 73 and 90/100 (see 1, 3, 5, 9, 10, 15, 17), and their handwriting performance is satisfactory. On the other side, 10 students (Nos. 2, 4, 6, 7, 8, 11, 12, 13, 16, 18) whose marks in the exams are less than 60/100 performed unsatisfactorily in the dictation. This indicates the correlation between students' poor handwriting and poor academic achievement in the research methods course.

4. Preparation for International Tests

Table 6

	Handwriting legibility			Letter formation			Uniformity of letter size			Spelling Mistakes			Spacing between letters and words			Alignment of lines of writing			Exams' result (Term works+ final exam+ total)		
	HS	S	NS	HS	S	NS	HS	S	NS	HS	S	NS	HS	S	NS	HS	S	NS	S.W	F	T
1	√				√		√				√		√			√			46	46	92
2		√				√			√		√		√				√		39	41	80
3		√			√			√			√		√				√		44	47	91
4	√				√			√				√		√			√		47	44	91
5		√			√			√			√		√				√		36	36	72
6	√			√				√			√		√				√		48	49	97
7		√			√				√	√			√				√		40	43	83
8	√					√	√				√		√					√	42	40	82
9			√		√			√				√		√				√	29	31	60
10			√		√			√				√			√			√	23	25	48
11		√			√			√			√		√				√		33	31	64

Data Description

According to the table, the course Preparation for International Tests taught in the last semester of the B.A. (8th level) shows that students who scored high fulfilled the six criteria for having legible handwriting. Their marks are between 72 to 92 out of 100 (see 1,2,3,4,5,6,7,8). Their handwriting is either satisfactory or highly satisfactory. On the other hand, those whose handwriting is unsatisfactory in all criteria scored low marks in the exams (see 9, 10, 11). This shows a correlation between students' handwriting and their overall academic success.

II. Analyzing teachers' impression of their students' poor handwriting and its relation to their overall low academic performance

Table 7: Teachers' Attitude towards Students' Handwriting Performance

Items	Standard Deviation	Mean
1. Students find it challenging to keep pace when they have to listen and write sentences in English	4.09	.900
2. Students make a lot of spelling mistakes when they write.	4.30	.974
3. Students get confused using upper case and lower-case letters when they write.	3.91	.668
4. Students have problems forming letters correctly	3.32	1.041
5. Students find it challenging to use the correct punctuation when they write.	4.39	.783
6. Students need to be familiar with taking dictation from the primary stages of their education.	4.65	.487
7. Students lack the knowledge of maintaining the margin on the paper while writing.	3.70	.822
8. Students find it challenging to keep their papers neat and clean.	3.57	.945
9. Students face problems when they have to take down notes in the class	3.91	.921
10. Students find it challenging to write for a long time.	4.30	.703

11. Students need to practice their handwriting skills more.	4.65	.487
12. It is the responsibility of the teachers to allocate time for students to practice writing.	3.78	.998
13. It is preferable to ask students to have a booklet in every course and dictate to them part of the material	3.83	.778
14. Current writing courses do not equip students to be good at handwriting	3.70	1.105
15. Students who are beginners/freshers should be encouraged to complete at least one task on handwriting every week.	4.48	.665
16. All the teachers who teach the skills courses should pay attention to students' handwriting.	4.22	.902
17. Students with poor handwriting score low marks in writing-based assessment methods.	3.96	.976
18. Poor handwriting of students creates a negative impression of teachers on students' overall academic performance.	4.18	.853
19. There is a strong relation between handwriting in general and students' overall academic achievement	3.64	1.136

4. FINDINGS

After gathering the data, it was analyzed statistically using SPSS (Version 22). A tabulation of descriptive statistics: minimum, maximum, mean, and standard deviation was prepared to determine the teachers' views regarding the importance of handwriting and its knock-on effects on the overall performance of the students, as illustrated in table 5.

Out of 19 variables, 9 supported that handwriting plays an important role in students' overall academic performance. The highest score was achieved in items 6 and 11, which stated *Students need to be familiar with taking dictation from the primary stages of their education*, and *Students need to practice their handwriting skills more* respectively. On the other hand, the lowest score was achieved in items 4 and 8, which stated that *Students have problems forming letters correctly* and *Students find it challenging to keep their paper neat and clean*, respectively.

This indicates that the participants agree with these variables. The data revealed that most of the respondents agreed with the view that handwriting plays an important role in the overall academic performance of students. They believe that students have problems keeping pace when they listen and write sentences. They state that their students make many spelling mistakes and get confused using upper- and lower-case letters when they write with their hands. Students also face problems in using punctuation correctly.

Some teachers showed that students lack the knowledge of maintaining the margin on the paper while writing. Most teachers confirm that their students face problems when they have to take down notes in class or write for a long time. All teachers believe that students need to practice handwriting skills a lot. It also creates a negative impression of teachers on students' overall academic performance.

5. DISCUSSION

The findings of this study show that handwriting is an essential skill for EFL learners worldwide. This view is supported by (Gholaminejad et al., 2013; Jabali, 2018; Du, 2020), who state that handwriting remains a demanding skill for EFL learners worldwide and cannot be neglected. The findings also show that students face challenges when they have to write on paper. Good handwriting helps students concentrate and gain knowledge better than those whose handwriting is poor. The teachers' attitude goes with Suto (2021) in his study, which states that handwriting skill is considered at the top of the problems of university students. It also aligns with Florey (2009) and Sassoon and Briem (2014), who state that lacking rigorous handwriting practice makes students' handwriting challenging to read and results in many handwriting problems, and affects their overall academic performance. Teachers unanimously agree with the idea that students with poor handwriting score low marks in writing-based assessment activities. This attitude has been approved by James and Engelhardt (2012), who conducted a study using resonance imaging technology with four- and five-year-old children. They observed that the areas of children's brains previously associated with reading were activated when they wrote letters to a much greater degree.

Moreover, since they do not practice writing, they cannot maintain margins properly and make many spelling and punctuation mistakes. Al-Bereiki et al. (2015) agree with this view when they say that among the many difficulties that Arab learners face, one is the problem of writing correct spellings on paper. This is supported by the view expressed by Altamimi & Rashid (2019) that to convey a message correctly, a person should have a good command of spelling. Many teachers in the questionnaire have agreed that it is the responsibility of teachers to pay attention to students' handwriting and allocate time for them to practice it. This is in correspondence with the study of Chapman (2003), who states that teachers are the ones who can create a suitable atmosphere in the class and make students participate in many writing projects. It is also seen that many students face problems when they have to listen and take down notes in class and write for a long time. As a result, most students only prefer to listen to lectures and do not take down notes. In a study by Shibata and Omura (2018), they concluded that handwriting is highly preferred while taking down notes. Mueller and Oppenheimer (2014) support this view that students of college and university who take notes on lectures using handwriting remember the idea they listen to in the lectures more than those who use laptops to take notes.

In a nutshell, poor handwriting negatively affects learners' academic accomplishments. This study strongly supports the hypothesis that there is a significant relationship between students' handwriting and scoring grades. Students with poor handwriting score low marks in exams compared to those whose handwriting is legible and satisfactory.

6. CONCLUSION

Technological development positively enhances learning skills (listening, speaking, and reading), but it contributes to the decline of writing skills because students hardly use their hands in writing. They depend heavily on devices when taking notes or writing assignments. Such a trend results in making students poor in handwriting. Handwriting is a skill that should be taught from the very beginning of a child's education. Since it is a teachable and learnable skill, parents and teachers should highlight its importance. It must be remembered that when children start to scribble their first letters, they are not only learning to write, but they are also preparing to convey messages to others through writing. Good handwriting boosts one's confidence, and one can successfully overcome all inhibitions. It is a lifelong skill that remains with us even after our academic studies are over. It is like a thumb stamp that shows the identity of an individual. Hence, the more importance we give to improving our students' handwriting, the better result they can show through their high academic performance.

Since handwriting skill is at stake, collaborative and collective practices should be applied to preserve them and make students always aware of their importance. With this concern, this study comes up with some recommendations. Teachers, in general, should emphasize the importance of handwriting by allotting time for students in the class to write in their notebooks and to write regular assignments by hand. The feedback should focus primarily on the six characteristics of the study (handwriting legibility, letter formation, uniformity of letter size, spelling correction, spacing between letters and words, and alignment of writing lines). With time, students' good handwriting would positively affect their academic performance.

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Declaration of Conflicting Interests

The author(s) declare no potential conflicts of interest.

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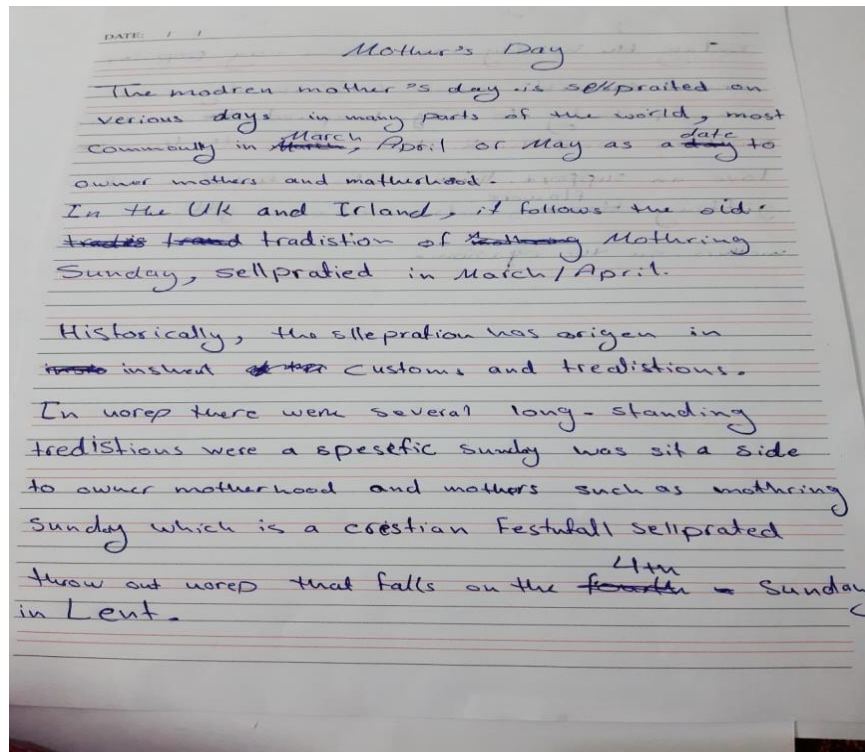
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APPENDICES

Appendix A



Appendix B

