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Faculty of Letters and Languages  
Department of Foreign Languages

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Sciences of the language

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**Investigating The Relationship Between Cognitive Abilities and  
Spelling Errors in Enhancing Students Writing Communication  
The Case of Third Year LMD EFL Students at Mohamed Kheider  
University Biskra**

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## **Dedication**

*In the name of Allah, I praise Allah for providing me with strength and patience to complete this dissertation*

*It is an honor to dedicate this work*

*to my source of ambitions, supports and sacrifice, my lovely parents Mom & Dad who have always taught me trust in Allah, believe in hard work and teach me that so much could be done with little.*

*To my brothers Chemsou, Massi & Anzar for their funny, mood changing days*

*To my sister Cirta for her daily support and eternal love*

*To my little cuties Tesnim & Anis for their enthusiasm for the celebration day which gave me more power to make them happy*

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*To my gorgeous aunt Rima & her husband my uncle Ahmed who used to support me*

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## **Abstract**

Spelling is an important aspect of a language and an effective factor in writing appropriately and conveying accurate message to a reader. In addition to, abilities that help spelling skill to be enhanced and developed which are cognitive abilities that is concerned with human entire energies. This current study attempts to investigate the spelling challenges and errors made by third year LMD students who are studying English as a second language and preparing for passing to Master degree also these spelling errors causes, as well as determining the relationship between improving spelling skill and using cognitive abilities and memory strategies. For this objective, a descriptive analytic research with qualitative approach was applied. To collect data, a students' and teachers' questionnaires were formulated. The sample consisted of 35 third year LMD students and 11 teachers at Mohamed Kheider University of Biskra. The main results show that students face frequent difficulties and obstacles in academic writing, mainly at the level of spelling. The teachers' questionnaire shows similar results in terms of the areas of challenges citing new methods and techniques to avoid the errors. Results also reveal that teachers attribute difficulties mainly to the lack of phonemic awareness and lack of reading and learning rules. Moreover, the majority of participants believe that using memory strategies is effective to learn spelling. The recommendations derived from the findings need to be considered by students, teachers, and syllabus designers.

**Key words:** spelling errors, cognitive abilities, phonemic awareness, memory, EFL students.

## List of Abbreviations

**EFL:** English as a Foreign Language

**LMD:** License Master Doctorate

**L1:** First Language

**L2:** Second Language

**et al.:** and others

**GVS:** Great Vowel Shift

**PA:** Phonemic Awareness

**CA:** Cognitive Abilities

**G:** General

**STM:** Short-Term Memory

**WM:** Working Memory

**etc.:** et cetera ("and the rest")

**n.d:** No Date

**P.:** Page

**%:** Percent

**e.g.:** For Example

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# **General Introduction**



## **Introduction**

People learn language to communicate with others. Communication can be spoken or written. Today, English is an international language and it is considered as the most important language in the world among many fields, one of them is Academia. English is manifested to be mastered by most people specifically EFL learners. Therefore, learning English language and all its aspects opens doors abroad for ambitious students. However, in order to learn English, students need to master the four skills: Listening, speaking, reading and writing to communicate appropriately and confidently. Besides, writing plays an important role to learn the language and communicate by written pieces. The student who wants to communicate through writing should have appropriate content and correct forms of English and effective writing words (knowledge of spelling, punctuation, etc.). To understand writing materials well, students who read incorrectly written words may understand the word in an incorrect way and may also create a confusing problem in understanding the writer's message. Therefore, knowing and using the correct spelling and words helps to create good communication between the writer and the reader.

Since researchers developed many aspects in many fields, also in educational area and social systems in light of the rapid developments witnessed by facing the challenges of the future and working to develop all human energies in society. It has been believed to develop capacities for facilitating learning and teaching process that make learners depend on. These capacities are called cognitive abilities that are mainly depend on the tests that measure learners' educational strategies. Students differ in developing their cognitive skills. These capabilities may help other aspect and skills to be developed for instance spelling skills. In addition, there are a lot of techniques and methods related to the cognitive abilities that can improve writing and spelling level.

This research work attempts to shed the light on the relationship that exists between spelling errors and cognitive abilities. Its aim is to investigate the importance of cognitive abilities in improving EFL learners' level as well as identifying the spelling errors in order to reduce them and write accurately.

### **1. Statement of the problem**

Spelling is an important skill to read and to write which makes learners perform a valid communication. Also, Spelling is a complicated cognitive activity in which several mental processes are involved. Therefore, students commit spelling errors in their writings which affect them negatively.

In addition, Cognitive abilities are brain-based skills needed to carry out any task from the simplest to the most complex. They have more to do with the mechanisms of how to learn, remember, problem-solve, and pay attention, rather than with any actual knowledge.

This study will investigate the relationship between cognitive abilities and spelling errors i.e., using strategies and techniques to avoid and reduce spelling errors in order to improve EFL learners' writings. As well as to promote their memories functions.

### **2. Research Questions**

In this study we attempted to answer following questions:

- why do third year LMD EFL students commit spelling errors and in this level?
- Has the teacher a big role in decreasing students' errors?
- What techniques that help students to avoid spelling errors?
- Do students who read a lot write errors free texts?
- Is there a relationship between students' memory type and doing errors?



### **3. Research Hypotheses**

It is hypothesized that if students were aware of spelling patterns (phonology, morphology...) the ability of recognizing the phonemic awareness by using memory strategies, they would enhance their level and commit fewer spelling errors.

### **4. Aim of the study**

This study aimed to reduce errors and to write an accurate text or essay free of spelling errors. In addition to find techniques and strategies that help students avoid committing errors and students challenges with the latter. This study is linked to both teachers and students.

### **5. Research methodology**

#### **5.1 Research method**

In this study, a descriptive analytic method would be followed in analyzing questionnaires of third year LMD EFL students and teachers at Biskra University, to determine the lacks and challenges faced by third year LMD EFL students in spelling writing. Also, this study aims to find new strategies and techniques to improve students writing and which kinds of errors they do by trying some essential skills related to cognitive abilities.

#### **5.2 Population and Sampling**

The present study dealt with third year LMD English at Mohamed Kheider University of Biskra in the academic year 2020-2021. We have chosen third year because they experienced writing during three years. Moreover, the aim was to see the extent to which students were able to make a link between spelling and their cognitive capacities to decrease spelling errors. From the whole population of 250 students, we have chosen randomly a sample of 35 students. In addition, a sample of 11 teachers of different modules has been selected to gather their opinions, attitude and experience about the topic under investigation.

### **5.3 Data gathering Tools**

Concerning the data collection used in this study, two questionnaires are designed in order to collect a considerable amount of data. One questionnaire was designed to EFL teachers in the English division of Mohamed Kheider University in order to gather their opinions about teaching written expression and dealing with spelling skill and its effect on third year EFL writings. Moreover, they were the best source of investigation considering their experience in the field of teaching. The aim was to know if they apply the suitable techniques in teaching spelling and correcting errors in order to improve students' level in writing academically. The second questionnaire was planned to a sample of third year LMD students of English in order to find out their difficulties in learning spelling as well as to know their phonemic awareness concerning the strategies used in learning spelling. It was distributed to our sample of 35 students. Both questionnaires contain open-ended and closed-ended questions (semi-structured questionnaire).

# **Chapter One**

## **An Overview of**

### **Spelling Errors**

## Chapter One: An overview of spelling errors

### Introduction

Writing and reading have an effective role in learning spelling to EFL learners. Indeed, spelling is important in writing because it is the basis of academic writing to write accurately and appropriately. Spelling is the conversion of the sound of speech (phoneme) into writing (grapheme) it regulates the way of organizing the letters in expressions which helps learners to write tidy and clear paper. Spelling is a part of orthography which is highly needed in standard language. Therefore, students learn to spell words every course because the pronunciation of words change overtime in all languages. However, students often commit errors during writing either at the classroom or at home while trying to express their ideas.

This chapter enlighten the elements of spelling as well as types and categories of spelling errors. In addition, it illustrates some spelling patterns, besides to the connection of spelling to other skills. Also, this chapter goes through the importance of phonemic awareness and phonics in learning spelling.

### 1. Definition of spelling errors

**1.1. Spelling** (Oxford Learner's Dictionaries,2021) noun /'speliŋ/ [uncountable] the act of forming words correctly from individual letters; the ability to do this.

**1.2. Error** (Oxford Advanced Learner's Dictionary,2021) noun /'erə(r)/ [countable, uncountable] a mistake, especially one that causes problems or affects the result of something.

Al-zuoud and Kabilen (2013.p,165) defined spelling as “the learner’s ability to write a word correctly. The study of learners’ spelling errors provides an opportunity to understand and facilitate in the learners’ spelling difficulties.” So, spelling make learners capable to write correctly to provide high quality writings and recognize the spelling errors which lead to facilitate and cover all spelling challenges. Cook (1999.p,1) emphasized that "unlike native speakers, students may not know the actual system of English, and will appear to use the wrong letter". This indicates that the students face problems in differentiating between the systems of mother language and foreign language, then they commit mistakes in writing constantly. Also, Cook (1997.p,474) described spelling as “a sign of education” which appoint the learner level in writing and reading as well, because reading skill helps them to gain more vocabulary that leads learners to be able to spell words.

Berninger and Fayol (January 2008.p,1) declared that “Spelling is a code that uses letter sequences to represent specific words that have an associated pronunciation and meaning within the mental dictionary.” They intend to explain spelling as a combination of letters produced to form a word to convey an idea from verbal and mental to written form. As well as, spelling is the ability to transcribe what is read in writing using what is memorized.

Spelling is a set of conventions that regulate the way of using graphemes (writing system) to represent a language in its written form...Spelling is one of the elements of orthography, and highly standardized spelling is a prescriptive element. (Wikipedia) In other words, it is reformulating sound units into writing units to express a language in a written text also spelling is an essential and normative factor in pronouncing and transmitting words correctly.

In addition, spelling is learned through a combination of how words sound (phonics), visual cues and knowledge of morphemes (how words are constructed from meaningful elements) and etymology (word origins) Spelling activities should be diverse and engaging,

and relate the context of the curriculum. (<http://digitalspellingresource.weebly.com/important-components-of-spelling.html> )

Furthermore, spelling is defined as the act of forming words correctly from individual letter (Hornby, 2000). This means spelling has its basics and rules to form words from letters in a correct order to be expressive; if not, it will lead to spelling errors.

## **2.What is spelling error?**

Before talking about spelling errors, it is essential to differentiate between errors and mistakes. Spelling errors are when a learner consistently makes the same misspellings over and over again, because they do not know what is correct. Spelling mistakes, on the other hand, are when a learner only occasionally misspells a word which they most of the time spell correctly (Ellis, 1997, p. 17). In other word, the mistake could be self-corrected, it is not systematic but accidental. However, the error cannot be corrected by the learner, so it is the teacher's role because it is systematic and deals with the language rules.

According to Corder (1981, cited in Al-Jayousi, 2011), mistakes are incorrect instances that are a result of performance. They are said to be slips that learner can correct by themselves. However, errors are the incorrect outputs that are due to problems in the underlying knowledge of the learner. Here, the learner lacks the competence to rectify the inaccurate responses.

According to Al-Jarf (2010.p,4), spelling errors can be either freely produced or elicited by certain tasks. Any word that does not match the target word in part or in full is marked as a misspelling. Any faulty word, faulty grapheme (single vowel, single consonant, vowel digraphs, consonant digraphs, phonogram, suffix, or prefix) within a word is counted as an error. Any graphemes that are added, deleted, substituted by another or reversed are counted

as misspellings. She is clarifying that testing learners' competency in writing words leads to identify the place of the mistake whatever its type, is considered as a misspelling. Also, the difference between the rules of language words or even their similarities in pronouncing may mislead learners in recognizing the correct spelling.

Protopapas et al. stated that "spelling errors are a rich source of information" i.e., whenever learners commit errors and mistakes as much they do, they gain more knowledge about writing accurately and flawless. As well as they recognize the rules and the standards of different words.

### **3.Spelling errors problems**

Spelling specifically is one of the many of English writing problems EFL students encounter, wherefore this chapter (next lines) will deal with some problems and elements of spelling to recognize other factors of doing spelling errors. One factor leads learners to commit mistakes which is the variety of consonants (digraphs and blends)and vowels (monophthongs, diphthongs and triphthongs), this kind of obstacles make writing difficult for students because they cannot know when to write a word with one consonant or vowel or more for example in the words "which" and "science" during the research students wrote them as "wich" and "cience/sience) because they only hear or pronounce the /w/ and /s/ sounds, here we notice the problem is in digraphs (words are written with two letters which make one sound) and forget about the silent letter. Also, talking about "diphthongs" which means "double sound" one vowel represents two sound such as "cold" is phonetically transcribed as [kəʊld] with the sounds /ə/ and /ʊ/. On the other hand, "triphthongs", literally "three sounds" like "shower" ['ʃaʊə(r)] contains three different sounds which are /a/, /ʊ/ and /ə/ (Oxford Word power dictionary.2006).

Besides, here, in Algeria system education, students are taught French language firstly at schools as a second language while they learn its rules by heart they become influenced by French language since preliminary. Then, at the next stages they write words as French without correcting them and they become a continuous error.

Through history, French was a dominant language in Europe and has influenced various languages and the biggest influence was on English. However, French and English do not belong to the same origin. The former is part of the Romance subgroup of Indo-European languages, whereas the latter belongs to the Germanic branch. Since the two languages have been in contact at different stages of their development and for quite long periods of time, the origin of over 70% of the English vocabulary can be traced back to French and Latin, (Hanifi.07 April 2019.p,37) this is called languages interference which confuses EFL learners in differentiating between the two spelling languages. Wherefore, in English, the affected learners would not be able to correctly formulate vowel sounds in minimal pairs, such as grin/green, sin/seen, mow/more. Another case of English-speaking French students is the omission of the sound [h] at the beginning of a word (Lim.25 Sep 2019). For example, instead of writing the word “hour”, they write “our” which refers to another meaning. Also, adding the vowel “e” at the end of words where it is not necessary like the expression “Femme fatale” in feminine form which means in English “fatal woman” or in the word “carotte” became “carrot”. As well as, the adoption of a French suffix such as -ique, -eur, and -oire, e.g.: électrique instead of electric. Another example, the same word with the same meaning but differ in writing such as “exercise” students write as in in French “exercice”, this is considered as an error.

As a result, it seems that similarities between languages represent variations in disguise because similarity of type does not require similarity of function. In fact, students still face some difficulties in being additional precise within their English language usage. For instance,



lexically speaking, they have a tendency to use French words to fill in the existing gaps in their awareness of English vocabulary.

Moreover, English is not a pure language; it is a mixture of old languages (Roman, Greek and Anglo-Saxon) and it is derived from Germanic. English has developed through three phases (Old English, Middle English and Modern English). Over these phases English spelling was changing gradually by different scholars, and sounds change. For example, when representing a vowel, the letter ⟨y⟩ represents the sound /ɪ/ in some words borrowed from Greek (reflecting an original upsilon), whereas the letter usually representing this sound in non-Greek words is the letter ⟨i⟩. Thus, the word myth /'mɪθ/ is of Greek origin, while pith /'pɪθ/ is a Germanic word (Wikipedia). Other examples such as, the sound /f/ may be spelled with the letter f as in reflex, or with the combination ph as in gramophone. The sound /s/ may be represented by the letter s, the letter c, or the combination sc, as in instant, cigar, and abscess. The sound /k/ may be spelled with the letters k, c or the combinations ck and ch: kitten, cat, luck, archetype. All these examples and cases are complicated because of the borrowing and changing the written form as it is suitable for one person or for politics and economics purposes, this makes the learner confused to memorize the words spelling.

Concerning this case, Boer (1817) declared that the study of “English Language reveals that its vocabulary is a mixture of Anglo-Saxon, Roman, and Norman-French and later Latin and Greek.” (p. 389)

Homophones (words with the same pronunciation but different meanings) may also be another historical case in distinguishing between two words' spelling. For instance, the words 'heir' and 'air' are pronounced in exactly the same way in most dialects, but in writing they are distinct from each other by their different spellings. But if the words were not common, learners would think that they are the same and write the with the same letters because they

sound the same. Therefore, writers seem to prefer to produce written forms they have seen before for specific words, even if there is not a good match between written characters and sounds.

Many studies agree on the fact that the first main cause of spelling errors is irregularities of the English spelling system (Smith, 1973; Bahloul, 2007; Al-Hassan, 2011; Al-Jayousi, 2011). In reality English spelling is inconsistent makes it more difficult and demand more effort to memorize utterances. For instance, vowels <ea> can be pronounced as /i:/ in freak or /ei/ in break. Similarly, /i:/ can be spelled using <ea> in cream or <ee> in bee. This inconsistency requires spellers to put more attention to correct spellings of particular words.

In addition, Harry (1970) clarifies that people / student commit spelling errors because they are not motivated to learn correct spelling due to lack of desire to learn it. The students themselves, too, do not take time to learn the spelling rules and/ or learn how to spell words and even they do not try to use all available means to learn how English words are supposed to be spelt. (As cited in Miressa & Dumessa, 2011, p.106)

Scholars aimed to adjust or reform the spelling of English to facilitate writing but without any result. However, Noah Webster popularized more phonetic spellings in the United States, such as flavor for British flavour, fiber for fibre, defense for defence, analyze for analyse, catalog for catalogue and so forth. These spellings already existed as alternatives, but Webster's dictionaries helped make them standard in the US. So, learners mix between English and British spelling and wonder which one is the correct for their academic writing.

According to Berninger, V., & Fayol, M. (2008):

Spelling is a code that uses letter sequences to represent specific words that have an associated pronunciation and meaning within the mental dictionary.

Three kinds of codes contribute to spelling: a phonological code (coding and

awareness of sounds in spoken words), an orthographic code (coding and awareness of letters in written words), and a morphological code (word parts at the beginning of words that modify shade of meaning and at end of words that mark tense, number, or part of speech). For example, the word “jumped” has five small sounds in it: /j/, /u/, /m/, /p/, and /t/ (these sounds are called phonemes). However, it has six letters. That is because the last two letters correspond to a word part (morpheme) that marks the past tense but corresponds to a single sound. In other words, that sound might be /d/ as in “named” or /ed/ as in “wanted”. (p.2)

These codes are linked to each other and they are necessary in spelling knowledge, if learners do not know or learn them, they would not be able to write words accurately and fall in spelling errors because words are composed of related sequences and different syllables. Spelling knowledge is vast which has an effect on learners’ education. It is involved rules, statistical patterns, or procedures that learners should know to facilitate writing procedure.

Another factor that caused spelling errors is the deficiency of books that deal with spelling rules in the school libraries because of the lack of attention given to the importance of learning spelling rules, also students lack interest to learn spelling. On the other hand, the teachers do not have a big desire to teach spelling of words is another reason of spelling problems. Even many teachers, sometimes, seem to commit spelling errors themselves while writing some notes on either the blackboard or exercise books. Thus, it drives to minimize the learners’ desire to learn correct spelling of English words. Many spelling errors are committed due to ignorance of the learners when they spell words. As well as, many English learners do not give attention to whether they write a word with the correct spelling or not. They simply write the way they feel instead of the way it is supposed to be written.

## **4. Elements of spelling**

As claimed by Ankucic. M (2019) Spelling knowledge is made up of five distinct elements:

### **4.1Phonology**

[phono ‘sound’ +-logy ‘study’]

Phonology is concerned with the smallest units of sound (phonemes). It is the understanding of sound in words; read and heard, spoken and written. Teaching phonology in spelling focuses on developing the skills to identify sounds through segmenting and syllabification and represent them using letters (graphemes).Although there are 26 letters in the English language, there are almost 40 phonemes, or sound units, in the English language.

### **4.2Orthography**

[orthos‘correct’ +-graphia‘writing’]

Orthography is concerned with the common letter sequences and patterns that are acceptable in the English spelling system. A rich orthographic knowledge allows students to make and apply rules and generalizations as well as develop visual sensitivity to acceptable letter patterns.

### **4.3Morphology**

[morpho‘shape’ +-logy‘study’]

Morphology is concerned with the smallest units of meaning (morphemes) within words. Instruction aims to develop knowledge of morphemes including prefixes and suffixes and the ability to manipulate and understand morphemes in words. A rich morphological knowledge is vital to allow writers to use known words in different parts of speech, person and tense.

### **4.4Etymology**

[etymos ‘true sense’ +-logy‘study’]

Etymology is concerned with the origin and history of words – where they came from, their pronunciation, and their meaning. Instruction aims to provide knowledge of these origins and how they inform spelling and meaning. A rich etymological knowledge is vital in storing words in a meaningful system and improves vocabulary.

#### **4.5 Lexical store**

The lexical store is an ordered and reliable store of words and word knowledge. It's where we store how words are spelled, what they mean, and their relationship to other words and meanings. Efficient retrieval of a reliable lexical store reduces the cognitive load in writing tasks and allows students to focus on the complex task of expressive communication. It also provides a bank of knowledge that can be used to apply known spelling to new words.

In other words, by recognizing the spelling elements, students will be able to become aware of sounds via segmenting and syllabification and constitute them the use of letters (graphemes). Also, a rich orthographic information permits students to make and follow regulations and generalizations in addition to increase visual sensitivity to appropriate letter patterns. In addition to increase information of morphemes along with prefixes and suffixes and the capacity to control and recognize morphemes in phrases. A rich morphological understanding is crucial to permit writers to apply familiar words in distinctive components of speech, individual and tense. Another element which is Etymology deals with the origin and history of words, their pronunciation, and their meaning. It aims to supply data of those origins and the way they inform writing system and meaning. a rich history knowledge is significant in storing words during a significant system and improves vocabulary. The last one is lexical store that is a regulated and dependable store of words and word knowledge. It's wherever we store words spelling, what they mean, and their relationship to alternative words

and meanings. This store allows students to reduce cognitive difficulties in writing tasks and permits them to express their communication with accurate and new spelling terms.

### **5. Types of spelling challenges**

Some of spelling errors that students find in difficulties are classified as mentioned in Mark Nichol article:

#### **5.1 Adding -e to convert Nouns to Verbs**

In a small class of words derive from Old English, an 'e' is appended to a noun to form a verb. Thus, the word for a receptacle or vessel for immersing a person or an object in water, as well as associated senses, is bath, but a person is said to bathe. Likewise, we refer to the air one takes in one's mouth or nose during respiration as breath, but when we describe the act of respiration, we use the term breathe.

Also, cloth is the word for material used to make dresses, but we clothe ourselves when we dress. A sheath is a cover or case, but when we place something in the sheath, we use the word sheathe to describe the action. Meanwhile, a wreath is a circular arrangement of vegetation used as decoration or to denote bestowal of an honor, while wreathe means "shape into a wreath" in literal and figurative senses. And teeth are bonelike appendages in animals' mouths, while teethe refers to the emergence of these processes from the gums.

One complication in this class is that although swath is the spelling of the noun referring to a row of vegetation cut down (and similar senses), swathe means "something used to bind or wrap" as well as functioning as a verb referring to the act of binding or wrapping.

#### **5.2 Adding -e to convert Adjectives to Verbs**

Although loath is an adjective, not a noun, and it and loathe have different meanings ('loath' means reluctant/ hesitated to do something and 'to loathe' is to despise or hate),

writers should recognize that the verb follows the same form as the others mentioned above. Similarly, sooth and soothe, though their status as cognates is not immediately apparent, follow this rule (Sooth is an archaic word meaning “true” or “truth”—and is the root of forsooth, an affected synonym for indeed with the implication of contempt or doubt—while to soothe is to calm or relieve; the link is that the latter word originally meant “verify.”).

However, that in the -ing forms of these words, the -e is omitted even in verb form: bathing, breathing, clothing, sheathing, teething, wreathing, loathing, soothing.

### **5.3 Adding -k Before -ing and -y Endings After -c**

For a few words ending in -c, when the word is converted to an -ing form (whether functioning as a noun or a verb) or an adjectival -y form, a -k is inserted to signal that the c sound remains hard (as in case) rather than soft (as in cell). These words include picnic (picnicking, meaning “participating in an outdoor meal,” often one served atop a blanket placed on the ground), frolic (frolicking, meaning “amusing oneself or acting playfully”), mimic (mimicking, meaning “imitating, resembling, or simulating”), politic (politicking, meaning “engaging in political activity or discussion”), colic (colicky, meaning “acting irritably or experiencing abdominal pain”), traffic (trafficking, meaning “dealing or trading, or engaging in an activity”), garlic (garlicky, meaning “smelling or tasting like or reminiscent of the scent or taste of garlic”), and panic (panicky, meaning “agitated or anxious”).

Consequently, the three different categories are making learners struggle in learning English spelling because where they found them complicated and they need to memorize them and make big efforts but by classifying them into similarly cases it will be easy to remember. Categorizing spelling errors enables teacher to design strategies for teaching spelling effectively.

## 6. Types of spelling errors

Writers write a message that readers may or may not understand depending on the types of errors made. In writing, it is expected that students would make different types of errors that may hinder comprehension. One of such errors that plague some students' writing is spelling errors (Al Jayousi.2011, p.6). In other words, there will be no harmony between the reader and the writer's writings, the ideas overlap and the reader misunderstands what the writer means and the communication lowers. Hildreth (1962) believes that "knowing what the commonest types of [spelling] errors are will put teachers on the lookout for them" (p. 224). It enables them to direct their attention to these errors and help students overcome them. Hence, According to Invernizz and Hayes (2004), identifying the students' error types can allow teachers to design learning tasks to focus on the learners' specific needs. So, identifying spelling errors is important to recognize the students' lacks and difficulties and search about solutions and strategies to reduce them. Several studies have investigated many errors types in writing using different systems. As Al-Bereiki and Al-Mekhlafi stated in their research that "Studying learners' misspellings can inform educators about which stage of spelling development the learner is stuck at." (2015, p.663). Also, Kohnen, Nickels and Castles (2009) proposed to recognize learner' writing system difficulties as early as doable to enhance spelling skills and to facilitate text writing.

Some research work has been allocated to analyze the patterns of spelling errors (Al-Harrasi, 2012) and findings of spelling errors' studies differ according to the aims of each study (Emery, 2005). Wherefore, Cook (1997) classified spelling errors into four types: omission and addition, substitution, transposition and sound-based errors. However, Al-Jarf (2010) proposed classifying misspellings into phonological and orthographic problems. In addition to Mahmoud (2013) classified spelling errors in his corpus into inter-lingual and



intra-lingual. He defended his classification method of ‘two-way’ for the aim of finding implications for classroom instruction.

Al-Jayousi (2011) classified spelling errors relying on their types and causes. He classified misspellings according to their types into six categories; substitution, omission, addition, disordering, segmentation and unrecognizable. These errors may be manifested due to unqualified learning or difficulties concealed in the target language itself, teaching in a wrong way, confused thinking or lack of dissimilarity of L1 and L2

This study classifies Errors into four types as Observed in students’ writings which make them face difficulties in learning accurate spelling:

### 6.1 Omission

The first error that students fall in writing compositions is ‘omission’ which means deleting a letter or more in one word.

Examples:

<b>Wrong form</b>	<b>Correct form</b>
Arogant	Arrogant
Government	Government
Consious	Conscious
Concience	Conscience
Car	Care
Wht	What
Definetly	Definitely
Accomodation/Acommodation	Accommodation
Embarasment	Embarrassment

Accidently	Accidentally
Cience/ Sience	Science
Finaly	Finally
Wheras	Whereas
Wich	Which
Espiecly	Especially
Dicipline	Discipline
Millenium	Millennium

**Table1: Omission errors committed by University Mohamed Kheider Biskra Students**

The table above indicates the first type of spelling errors which is committed by third LMD class, the letters in the words were omitted differently. The most frequently omitted vowel is “e” but in different positions (middle/ end). Also, other consonants are deleted such as (r, n, s, a, m, c, l, h, I) some of those letters are considered as silent and others are doubled so the student thinks it is contained only one. As well as, the adverbs that are added the suffix ‘ly’ at the end with the words written in “l” at the end, students write only one letter “l”.

### 6.2 Substitution

The second error that students face in writing compositions is ‘Substitution’ which means to substitute or to replace a vowel with an incorrect vowel.

Examples:

Wrong form	Correct form
Cemetary	Cemetery
Independent	Independent

Dependant	Dependent
Sin	Seen
Sid	Seed
Summery	Summary
Wos	Was
College	Collage
Elementery	Elementary
Sur	Sir
As	Us
Than	Then

**Table2: Substitution errors committed by University Mohamed Kheider Biskra students.**

As shown in the table, some letters are replaced by others which change the word meaning or the becomes meaningless, due to the difference between pronunciation and the written form such as in the words (Sin/ Seen) replacing the vowels “ee” to the vowel “I” which shows the influence of French language influence. In addition to the words (elementary/ elemntery) and (as/us), the first one changing the vowel ‘a’ to ‘e’ because of the difference between sound and form. The second words both have different meanings according to the context but the same pronunciation at the first vowel.

### 6.3 Addition or Insertion

The third error that students face in writing compositions is ‘Addition or Insertion’ which means to add one letter or more in a word.

Examples:

Wrong form	Correct form
Get ride of	Get rid of
Whay	Why
Familly	Family
Pronounciation	Pronunciation
Carefull	Careful
Closelly	Closely

**Table3: Insertion errors committed by University Mohamed Kheider Biskra students.**

The table mentioning the insertion or adding letters in writing which is considered a spelling error. students add letters (vowels or consonants) to the word. For example, in the words ‘family, careful, closely’, they added two ‘ls’ instead of one in the suffix ‘ly’. As well as, in the expression ‘get rid of it is added a vowel ‘e’ where becomes ‘ride’ so its meaning changes. Also, in question mark ‘why’ is added a vowel ‘a’ which makes the word meaningless.

#### **6.4 Transposition**

The last error that students encounter in writing compositions is ‘Transposition’ that means to reverse the location of a letter or more.

Examples:

Wrong form	Correct form
Athiest	Atheist
Their	Their
Choas	Chaos

Achieve	Achieve
Friend	Friend
Believe	Believe
Middel	Middle
Plaese	Please
Responsibel	Responsible

**Table4: Transposition errors committed by University Mohamed Kheider Biskra students.**

This table illustrates the spelling error type which is transposition where students reverse the letters' location. It is noticed that the main common reversed letters are 'ie" as in the words (atheist, their, achieve, believe) because they mix between the sounds /e/ and /i/ and the reason of unknowing the rule. Besides, in changing the place of 'e' and 'l' when they come together in a word as in (responsible, middle) because learners think that the sound schwa /ə/ is appeared.

Other additional types of errors that make obstacles for learners and they do not notice that is an error. 'Segment' is a noticeable error in many writings which means writing one word into two parts for example breakfast were written as (break fast). Also, according to Al Jayousi (2011, p.38) 'Unrecognizable' is another type, that includes words that were unrecognized because they were unreadable, such as babiuto. This category was considered as a wastebasket for such words. However, it is not considered as a real error because it is rarely to find.

As well as 'homophones' are reviewed as a type of errors because learners write a word as another word that they have the same pronunciation, this kind of words is confusing such as (Where/Were), (Eye/ I), (Hour/Our), (Knew/new). As Ringbom (1977) stated that

“Homophones, words that have different meanings and different spellings but sound the same, also are expected to cause learners some confusion.”

Spelling varies for the reason that English orthography and writings differ from British and American, instead of thinking of one word, EFL students think of both and confuse which one is correct. For example, program/programme, and the difference in the accent affect spelling. It is possible that similarities in the two accents can promote learning at a certain level and differences can lead to more difficulties. One misspelling may change the meaning which the writer intended to transmit which makes problems in literatures.

Other quite serious mistakes exist because of students' carelessness when writing. Careless errors may be a result of attention difficulties and laziness in learning because students may be tired or lose some concentration, so they are unaware of their spelling mistakes.

## **7. Great Vowel Shift (GVS)**

It is noticeable that while writing a word, its spelling differs from its pronunciation. An event occurred to explain the reason of what we write is unlike what we say which is The Great Vowel Shift (GVS). The Great Vowel Shift is extremely complicated, having taken place in several stages. It completely overhauled the vowel system in English, and studying it helps explain a lot of weird things about English. Why does the letter "a" represent three different sounds in the words "cat," "late," and "father"? Menzer (2002, p.24)

the Great Vowel Shift significantly influenced the English phonology and resulted in the switch from Middle English to Modern English. The term "Great Vowel Shift" was coined by

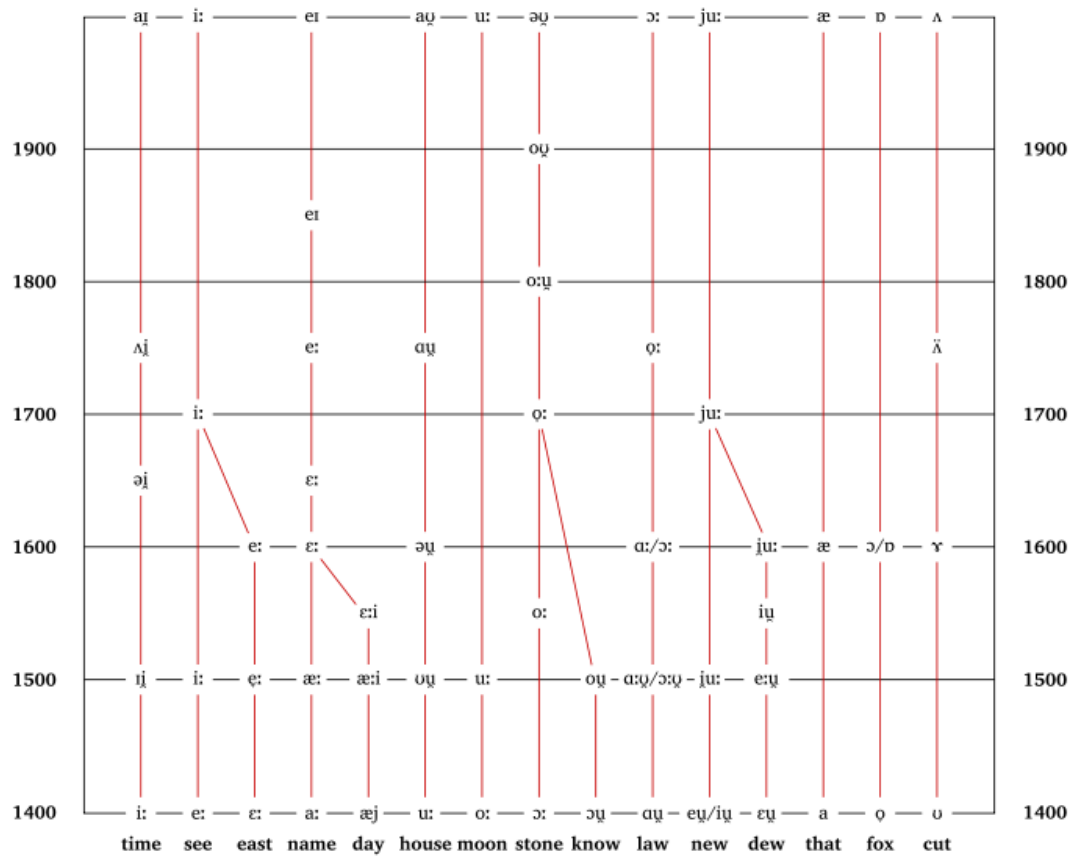
Danish linguist Otto Jespersen, who studied the changes in the English pronunciation (Omondi, July 18 2019 in World Facts)

According to Gussenhoven (2017, p.65) “three historical sound changes in English resulted from the enhancement of a duration cue involved in the signaling of phonological contrasts. In the case of the Great Vowel Shift (ca. 1600) the contrast involved was the opposition between long and short vowels”. One of the two phonetic rules enhancing the duration differences is the raising of long vowels, which improves their perceived longer duration by feature of the illusion of a shorter time needed for the production of vowel aims, as occurred in the Great Vowel Shift. The second mechanism is the reinforcement the second elements of closing diphthongs, which increases their realized shorter duration by the feature of an illusory change of the second elements into [w / j].

Lorenson and Napoli clarified that “The GVS has left its mark on the pronunciation and spelling of today, and by comparing today's English with that of yesteryear, it is possible to reconstruct the probable sub steps of the GVS. There are many theories about the nature of vowels, and the nature and causes of sound change, and by examining these it is evident that the Great Vowel Shift is a fine example of a natural phonological change.” (1991, p.2)

Conflicts appeared about confusing spelling of Modern English where it is difficult to imagine that English “was once a language with a one-to-one correspondence between the spelling and pronunciation of its sounds.” (Lorenson and Napoli. 1991)Through Old English and most of Middle English, spelling was phonetic. It was not as constant as it is today, and for the common of its history, as the sounds of English changed, also their illustration on paper.

The following presentation of the Great Vowel Shift shows the consistent structure of the changes of vowels through history.



**Figure1. Presentation of the phases’ changes of Great Vowel Shift according to Wheeler,L Kip. "Middle English consonant sounds"**

This timeline presents the fundamental vowel changes that emerged between late Middle English in the year 1400 and Received Pronunciation in the mid-20th century by using demonstrative words. The Great Vowel Shift arose in the lower partial of the table, between 1400 and 1600–1700. The variations that occurred after 1700 are not considered part of the Great Vowel Shift. Pronunciation is given in the International Phonetic Alphabet.

GVS has showed many changes in English sounds and vowels, it made language develops new system since late Middle English, showed below:

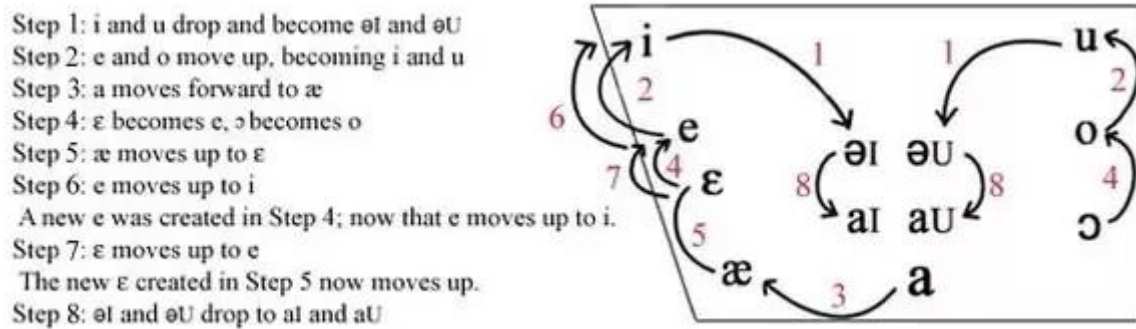


<i>Chaucer</i>	<i>Shakespeare</i>	<i>Today</i>	<i>Modern Spelling</i>
ti:d	təid	taid	tide
gre:n	gri:n	gri:n	green
mɛ:t	me:t	mi:t	meat
ma:k(ə)	mɛ:k	meik	make
gɔ:t	go:t	gəʊt	goat
fɔ:d	fu:d	fu:d	food
hu:s	həʊs	həʊs	house
kut	kut	kʌt	cut
rɪŋ	rɪŋ	rɪŋ	ring
niçt, ni:t	niçt, nəit	nart	night
kne:	kni:	ni:	knee

**Figure 2. The GVS changes correlated temporally to “Chaucer,” “Shakespeare,” and “Today.” From Barber, English Language, 197. Reproduced by permission of Cambridge University Press.**

Vowels are classified, in phonetics, by where and how they are produced in the mouth. It is possibly high (closed), mid, low (open), and also front, central, or back. For illustration, /i/ is a high (closed) and front vowel because of where the tongue is located during production. If the tongue is felt and hold the /i/ sound ("eeee") then the tongue lunge is felt forward and mouth be more closed than other vowels.

In the Great Vowel Shift the long vowels were pronounced higher in the mouth as detailed in the chart below.



**Figure3. Explanation of the transformation of vowels during GVS according to Melinda Menzer (2002).**

On the chart, the vowels totally changed their position. Some became diphthongs (two vowels in the same sound) and others remained monophthongs but converted to higher. Menzer (2002) gives a notable example: "route" can be pronounced to rhyme with both "root" and "out." This is all thanks to the great vowel shift. Our orthography had been standardized before the vowels had actually shifted.

Variety of sounds had changed through four phases which caused difficulties nowadays for EFL learners and even native speakers in writing words accurately and correctly without any mistake. However, This Middle English vowel in fact still exists there, as in [hu:s] house and in all the dialects in which [u:] has remained, the reflex of [o:] as in moon is a vowel other than [u:]. GVS has affected the language which led to the changing of the formation of words to facilitate for them writing, scholars thought about.

The Great Vowel Shift eternally affected the English language and the technique it is educated. The shift reformed English letters, sounds, and spellings, and given its meaning. The GVS permanently affected the English language and the way it is taught. The shift changed English letters, sounds, and spellings, and given its significance, any study of the history of the English language typically includes discussion of the Great Vowel Shift.

Therefore, misspellings are the consequence of GVS and the first and the last type of indication for determining when and how changes in pronunciation happened. On account of this change happened to the sounds, the written form of words has reformed as well which differ from one dialect to another. As a consequence, that it is not as writing as saying or pronunciation (they are not matched) the words that leads to confuse learners in the way or the form in transcribing speech into symbols. There is no a certain answer for what caused the Great Vowel Shift, but because of these changes through last phases that English has so many strange pronunciations. Students who have difficulty pronouncing English words today can blame people who lived in England in the Middle Ages!

Moreover, spelling English words is difficult by itself. English language is not a syllabic language. That means we do not sometimes write words as we pronounce them. This contradiction between the spoken and written form contributes frequently to spelling errors of students since many words having the same sound are spelt differently, many others have silent letters in their spelling, and many words are not spelt as they sound. Besides, Benyo (2014), spelling errors cause any sound problems. One of the reasons that spelling is difficult to be learned is related to the correspondence between the word sound and the way to spell it correctly.

## **8. Importance of spelling**

Ismail and Kareema (2013) stated in their research that “spelling is an important aspect of writing. Good spelling knowledge is the engine for efficient reading and writing”. According to Fitria (2020) “Good writing skills cannot be obtained only once. As the learners of English, they have to get used to practicing it because English is not a mother tongue”. Similar to writing or other skill, spelling also is one of learning English that must be become skilled at by the English learners. Westwood (2005, p. 3) also stated that spelling is important for

communication purposes. Spelling is an essential part of developing literate readers and writers (Schonell, 2014). Spelling is an important aspect of writing. Spelling encompasses systems of representing a language in a written form to convey verbal utterances.

On the other hand, Shaw (1970) suggests that the students should develop a desire to learn, devote sufficient time to learn the spelling of English words and become competent speller. In other words, spelling is significant because it pushes students to write in English correctly.

Spelling is based on rules that govern describing the symbols of speech sounds and illustrating the relationship between symbols of speech sounds, also describing the connection between symbols is either parting or integrating in a language. Spelling the word appropriately is very important, just as important as saying the word correctly in speaking. If the English words are not spelled correctly, perhaps they may not be properly understood. Additionally, Spelling is a rule that must be followed by language users for order and consistency, particularly in written language then the system will be an implied model for accuracy and clarity of meaning because incorrect spelling changes the meaning of the sentences.

Learning to spell properly is not typically easy for all people but it is crucial for all those who are learning the language. Because it is a part of what decides a learner's ability in English Language is his/her capacity to spell correctly for precise expressing in order to enhance the writing skill.

Moreover, poor spelling can inhibit writing (Sacre & Masterson, 2000). In case, a learner does not know the spelling of the word that would fit best in a given context, then an alternative word that is chosen might not express the exact concept. This leads to decrease the comprehensibility and accuracy of the text. Since, writing accurate spelling adds to the quality

of overall writing texts. The study of learners' spelling errors provides an opportunity to understand and facilitate in the learners' spelling difficulties (Al-zuoud & Kabilan, 2013). Thus, spelling is one of the important basics of learning English language skills that have an important role and have a helpful influence on other skills besides listening, reading, and writing. Indeed, spelling is not the opposite of reading, but both skills share mutual relationships and teaching spelling may transfer to reading because through reading get more new vocabulary that may learners learn and recognize their way of writing appropriately in the new language in which they are not fluent. As well as, while learners have a good ability in listening carefully to others' speech or communication, they may transfer the communication into an, accurate and understandable utterances with suitable signs and symbols.

## **9. Phonemic awareness and phonics**

### **9.1 Phonemic awareness (PA)**

“Phonemic Awareness is the understanding that spoken words are made up of individual sounds, called phonemes. Phonemic awareness is oral and auditory, and the focus is on the sounds in words. Phonemic awareness is often confused with phonics, however, unlike phonics, phonemic awareness does not involve print or letter names. It is critical to understand the difference between the two, as reading is phonologically based, not visual as we often think it is” (Bottari,2020). Means that phonemic awareness focuses only on sounds and verbal interaction during a communication either with a person or during reading.

Likewise, phonemic awareness is the capacity to distinguish sounds, and identify and employ sounds in words. It is occurred when “the phonological processor usually works unconsciously when we listen and speak. It is designed to extract the meaning of what is said, not to notice the speech sounds in the words. It is designed to do its job automatically in the

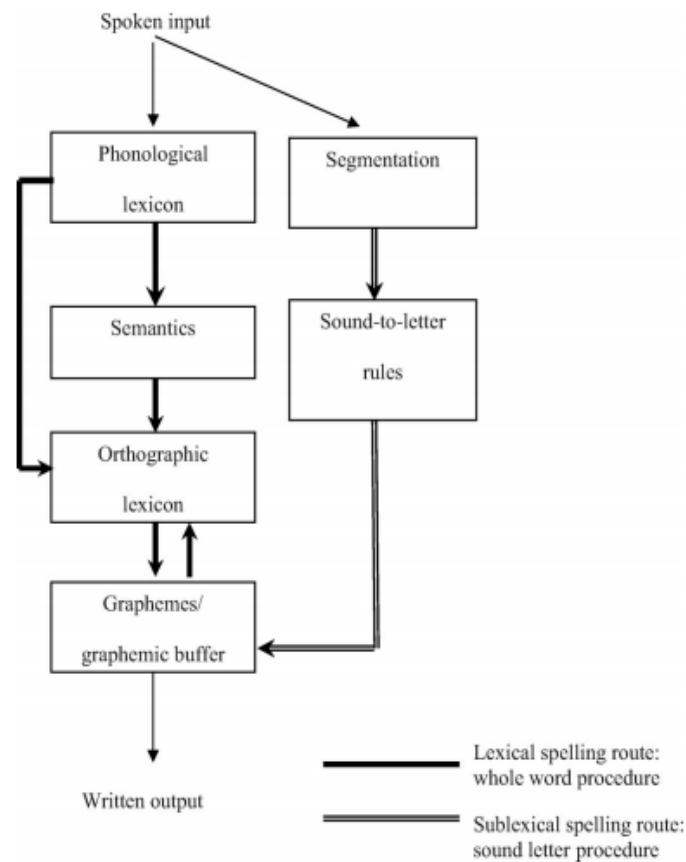
service of efficient communication. But reading and spelling require a level of metalinguistic speech that is not natural or easily acquired” (Moats and Tolman, 2009). Therefore, teaching speech-sound awareness lessens and eases reading and spelling difficulties

In addition, (Good, Simmons, and Kame'enui, 2001; Torgesen, 1998, 2004) stated that phoneme awareness predicts later outcomes in reading and spelling Phoneme awareness facilitates growth in printed word recognition. Even before a student learns to read, we can predict with a high level of accuracy whether that student will be a good reader or a poor reader by the end of third grade and beyond (as cited in Moats and Tolman, 2009). In another meaning, prediction is probable with simple tests that estimate awareness of speech sounds in words, knowing of letter names, recognizing of sound-symbol harmonization, and vocabulary. Wherefore, the learner needs to develop phonological awareness, this ability which enables him to realize that words are made of letters, that words are made of phonemes and that there is a non-random correspondence between the two. In addition, learning this instruction offers learners a concept that the words they hear in oral language are not full units but are ‘co-articulated’ or mutual sounds that make up a word. Once learners master this concept they may separate, combine, segment and manipulate those sounds and write them down correctly.

Therefore, PA is essential to learning to read in an alphabetic writing system, because letters signify sounds or phonemes. Without this perception, phonics makes slight sense. Also, it engages the learner to segment and discriminate the minimum units of oral language in order to achieve a sufficient degree of phonological awareness. On the other hand, it is based on the letter and the grapheme, basic units of the alphabetical system, which allows this learner to identify them unambiguously.

Stages that followed to transform the sound into graphic when the student spell a word, according to Kohnen et al. “the word’s phonology (sound structure) will be accessed from the

‘phonological lexicon’. Subsequently, the orthographic representation of that word is retrieved from the orthographic lexicon” (2009, p.116)



**Figure 4. Schematic representation of the functional architecture of spelling**

According to the scheme above, it is mentioned that the word goes by different stages to be written. When the word is produced as a sound (spoken input) it is formed as smallest units (phonemes) and divided into segments and parts to recognize which letters fit the sounds. Then interpreting the meaning (letter sequences and patterns), the rules of the pronounced-spelled word as well as the morphemes of the verbal unit to know if the graphemes are suitable. Thereafter, translating the item into written output which may be written appropriately.

Unquestionably, phonological awareness raises the spelling memorization of particular word forms, which is helpful in the reading procedure. Research has showed that spelling

presentation influences reading presentation, just as the latter influences the former. Nevertheless, learners who have unbalanced phonological basics find it problematic to comprehend and transmit the printed language.

## **9.2. Phonics**

Phonics instruction involves teaching students to know the relationships between letters and sounds and how to use this knowledge to recognize words when reading, and to spell words when writing.

Bottari (2020) claims that while phonemic awareness is oral and auditory, phonics instruction is both visual and auditory. The focus of phonics instruction is letter-sound relationships. During explicit phonics instruction students are taught the letter or letter combinations that represent the 44 sounds or phonemes in the English language. Besides, phonics is "a system of teaching reading that builds on the alphabetic principle, a system of which a central component is the teaching of correspondences between letters or groups of letters and their pronunciations" (Adams, 1990, p. 50). Therefore, "Phonics is the understanding that there is a predictable relationship between phonemes (the sounds of spoken language) and graphemes (the letters and spellings that presents those sounds in written language)" (Sarwono & Purmanto, 2013). In other words, it is a method for teaching English learners to read and write where phonics refers to connecting letters or letter groups with the sound they represent.

Likewise, phonics approach is some procedures to allow freshman readers to interpret new written words by sounding out, or in phonics terms, blending the sound spelling patterns. Studies investigated that in order to become fluent readers, students are required to learn decoding unidentified words accurately and automatically.

Phonics and phonemic awareness are extremely linked owing to learning about one aspect strengthens the other. Both deal with sounds, as phonemic awareness encompasses spoken language and phonics encompasses written language. For instance, asking students to show their phonemic



awareness when the instructor says 'mat and' asks them to say the three detached sounds they hear in the word. Subsequently, both skills are essential when teaching students to decode words precisely and inevitably. Phonemic awareness provides the learner basics which help to build phonics instruction. Ultimately, learning reading students may learn spelling accurately, sounds and letters are connected to each other.

## **Conclusion**

EFL learners face problems in writing that causes spelling errors which make the writings messy. Therefore, instructions are formulated and investigated to help learners in reducing the errors. Learners must know the nature of words and their origins as well as identifying spelling elements and errors types (omission, substitution, insertion and transposition) to distinguish between the words. In addition to be knowledgeable of the changes occurred to vowels and sounds over the years. Researchers confirmed that spelling is crucially important to develop learners' level in English communication in general, as writing and other skills specifically. Because spelling is attached to the learners' ability to transcribe a word appropriately and accurately, leading to add the quality of all writing texts. However, spelling is a complex cognitive activity in which many interrelated skills are involved. Therefore, learning spelling is linked to the phonemic awareness and phonics that allow the learners recognize the formulation and production of words and sounds by using other abilities including cognitive abilities and the capacity of students' memory.

## **Chapter Two**

### **an Overview of Cognitive Abilities**

## Chapter two: An Overview of Cognitive Abilities

### Introduction

Everyone has his own abilities in receiving and transmitting data or information during communicating either in speaking or in reading. While communicating, it is used specific capacities to decode and encode the utterances and interpret them in several ways as well as translate sounds into words and produce verbal output. Some people clearly and consistently understand new concepts quicker but others face obstacles, the first case may take an advantage of their brain capacities which are *cognitive abilities* but the second case they may not. The way that students use their cognitive abilities to deal with learning issues and difficulties differs from one to another. Also, in studying a foreign language it is essential to know how the brain works in acquiring a new knowledge of new language and the way it is formed and composed in the side of the relationship between producing sounds and reformulating them into writings to improve EFL level. Moreover, it is not completely liable on the student only, but also the teacher has role in helping his/her students to know the use of their skills and benefit from in writing accurately and correcting errors through following techniques.

Therefore, this chapter will explain and investigate the system of cognitive abilities works to identify the forms of words involving them in correct and appropriate meaning of sentences to avoid errors that occur in spelling, means discover the relationship between committing spelling errors and using cognitive abilities. Besides, the ability of the students' memory in detecting the error and correct it and the difference in memory types and this chapter is restricted to cognitive ability conceptions of intelligence used in learning English language spelling.

## **1. Definition of Cognitive Abilities (CA):**

### **1.1 Cognitive /'kɒɡ.nə. tɪv/ adjective,**

- a. connected with thinking or conscious mental processes. (Cambridge dictionaries online,2021)
- b. relating to, being, or involving conscious intellectual activity (such as thinking, reasoning, or remembering) (Merriam-Webster's online dictionary,2021)

### **1.2. Ability /ə'biləti/ noun,**

- a. the quality or state of being able especially: physical, mental, or legal power to do something
- b. competence in doing something

(Merriam-Webster's online dictionary,2021)

First of all, analyzing the derivation of the word cognition, the word comes from the Latin root 'cognoscere' (according to CogniFit Research), which means "to know". By cognition, we are usually referring to everything that is related to knowledge. In other words, the gathering of information that we have acquired through learning or experience.

Regardless of the word cognitive itself going back to the 15th century (Revlin, n.d), consideration to cognitive processes arose about more than eighteen centuries earlier, opening with Aristotle (384–322 BC) and his interest in the inner workings of the mind and how they influence the human experience. Aristotle ed on cognitive areas relating to memory, awareness and comprehension, and mental imagery. He cited great importance on confirming that his studies were based on empirical evidence, i.e., scientific information that is collected through observation and conscientious experimentation (Matlin, 2009, p. 4).

Robinson (2011) defined cognitive abilities “are aspects of mental functioning, such as memorizing and remembering; inhibiting and focusing attention; speed of information processing; and spatial and causal reasoning. Individual differences between people are measured by comparing scores on tests of these mental abilities”. In other words, cognitive abilities are features that every individual is characterized of, they differ in intellectual working for instance, memorizing and remembering; inhibiting and focusing attention; speed of information processing; and spatial and causal reasoning. Each person variances are measured by comparison of results by doing tests to compare these mental abilities among each other. Specifically, cognitive ability is closely connected to educational realization, work, and health results.

Ones, Dilchert & Viswesvaran (2012) specified that cognitive ability and intelligence are alternate labels for a construct that describes differences among individuals in terms of their mental capabilities. Frequently encountered definitions of the construct conceptualize it as a basic ability for abstract reasoning, problem solving, or adaptability (as cited in Wilhelm & Engle, 2004). Therefore, people are dissimilar in using their mental capacities system. These capacities have the power to think logically and reasonably as well as to solve different problems and the ability to adapt or to become familiar with them.

In addition, cognitive ability, sometimes referred to as general intelligence (g), is essential for human adaptation and survival. As McDaniel and Banks (as cited in Jensen, 1998) defined general cognitive ability is the ability that consistently differentiates individuals on mental abilities regardless of the cognitive task or test. Thus, general cognitive ability can be estimated in several ways with a variation of tests. McDaniel and Banks (n.d) added that general cognitive ability is synonymous with traditional conceptions of intelligence such as IQ and Charles Spearman's general intelligence factor (g).

Mayfield (2011) stated “An individual's cognitive ability provides the foundation for his or her innovative capabilities. Such cognitive abilities include intelligence, perseverance, creative thinking ability, and even pattern recognition. Cognitive ability refers to the functioning usually considered to be a person's mental faculties”. CA allows people to create and discover new things using awareness abilities acknowledging forms, all these reflect to mental capacities.

Durlauf (n.d) declared cognitive ability as multidimensional while acknowledging that the many different abilities are themselves positively correlated. This positive correlation across abilities has led most psychometricians to accept the reality of a general cognitive ability that is reflected in the full-scale score on major tests of cognitive ability or IQ. It is denoted that cognitive ability as dimensional whereas recognizing that the numerous completely different skills are themselves absolutely connected which drove scientists to accept the truth of positive relationship between CA and tests to improve knowledgeable ability and intelligence. Whereas cognitive ability tests assess abilities encompassed thinking (e.g., reasoning, perception, memory, verbal and mathematical ability, and problem solving). Such tests pose questions designed to estimate applicants' potential to use mental processes to solve work-related problems or to acquire new career knowledge.

Moreover, JuLi, Wood & Hanoch (2015) declared that cognitive ability is one of the possible contributors to choose set-size performance as well as preference, and dual-process models have been postulated to characterize the role of cognitive ability in decision making.

Snow (1994) argued cognitive abilities differentially facilitate learning under some, versus other conditions of instructional exposure. But he further argued that cognitive abilities only contribute to aptitudes for learning in combination with other affective and conative coordinates of learning processes. In other words, cognitive skills make learning easy under some alternative circumstances besides to the competence of combining other aspects with

learning processes. Hence, CA are related to intellectual functioning, within language are the skills permitting us to interpret sounds into words and produce verbal output.

## **2. Cognitive Processes**

Cognitive processes are the procedures we use to recognize new knowledge and make decisions based on particular knowledge. Various cognitive functions play a role in these cognitive processes: perception, attention, memory, reasoning... Each of these cognitive functions work together to merge the new knowledge and create a clear understanding of the world around us. This research focuses on the procedures used to enhance memory in education area. The cognitive processes are the following:

### **2.1. Attention as a cognitive process**

Attention is the cognitive process that permits people to focus on a stimulus or activity that evokes a specific functional reaction in mind, in order to develop it more carefully later. Therefore, attention is a vital cognitive role for the development of daily situations, and it is used in the common of tasks that are performed every day. Actually, it is technically controlling and adjusting the rest of the cognitive processes: from perception (attention is necessary for being able to pay attention to the stimuli that does not reach our senses) to learning and compound reasoning.

### **2.2. Memory as a cognitive process**

Memory is the cognitive role that allows us to code, store, and retrieve information from the previous events. As well as, memory is an elementary procedure for learning, as it is what allows us to create a sense of self uniqueness. There are many types of memory, like short-term memory, which is the ability to remember information for a short period of time (e.g., remember a telephone number until we can write it down on paper), and long-term memory,

which are all of the memories that are saved for a long period of time in minds. Hence, long-term memory can be divided into smaller groups, “declarative memory and procedural memory”. Declarative memory involves the knowledge that was acquired through language and education (like knowing that World War II ended in 1945), adding to knowledge learned through personal experiences (remembering what my grandma used buy for me). Procedural memory refers to learning through routines (learning how to drive or ride a bike). However, other types of memory are auditory memory, contextual memory, naming, and recognition. All these types are necessary in daily life.

### **2.3. Perception as a cognitive process**

Cognitive perception allows us to regulate realize the world through stimuli that we receive from our different senses, such as sight, hearing, taste, smell, and touch. Still most people are familiar with the common senses, but there are other less-known senses, like proprioception (stimuli or incentives which automatically perceives our position in space and judges spatial direction) and interception (which is the perception of our organs in our bodies, it gives us a sign to know when hungry or thirsty feelings begin). When the stimuli are received, our brain combine all of the information then creating a new memory.

### **2.4. Language as a cognitive process**

Language is the skill to express our thoughts, opinions, ideas and feelings through verbal expression. It is a means used to interconnect, communicate, organize and convey information about ourselves and the world. Thus, language and thought are developed together and are thoroughly related as they mutually influence each other because they are necessary to create an interaction between people all over the world and get understood.

### **2.5.Thought as a cognitive process**



Thought is important for all cognitive processes. It allows us to merge all of the facts received and to create relationships between events and knowledge. For achieving this process, it uses reasoning, synthesis (combining ideas to form a theory or system), and problem solving (called executive functions).

### **2.6. Learning as a cognitive process**

Learning is the cognitive process that acquiring new information into former knowledge. Besides, learning encompasses things as different behaviors or habits, for example learning how to walk, and knowledge learned through socialization. Several authors have talked about cognitive learning as the process of information entering the cognitive system and changing it.

Accordingly, the cognitive processes can occur naturally or insincerely, intentionally or unintentionally, but they usually happen fast. But these cognitive processes work constantly and without realizing them. This system is created to facilitate to learners the learning method by knowing how to use it intelligently to diminish mostly all kinds of problems.

Another essential process in writing is:

### **2.7. Writing as Cognitive Process**

are cognitive processes that writers in general use when they create written texts, the mental resources that these cognitive processes can draw on, and the task environment in which these cognitive processes operate. Where the mind uses a system helps the individual or the learner to use some techniques and strategies in writing accurately, and remembering some rules and basics. While using this process the instructor may follow a test to assess the learners' capacities which is IQ test. IQ stands for Intelligence Quotient that means an overall score resulting from a set of standardized tests or subtests planned to assess human intelligence in various areas (Elle and Dennis, 2006).

Typically, IQ tests are utilized to rate cognition in people with a variation of incapacities. IQ is not what these tests really measure, they do not assess all sides of human intelligence, but specific types of cognitive abilities, for example, verbal reasoning or nonverbal reasoning, which are related to school achievement, or specific kinds of occupational competence. these tests may be useful indicators of levels that specific kinds of cognitive abilities are currently developed and their constancy across development. In writing cognitive process, these tests are used to improve the written expression of ideas and reduce spelling errors.

### **3. Memory and cognitive abilities**

Memory is one of the units' students find most applicable to the academic and personal domains of their daily lives as the information in this unit can increase their abilities to study and learn in general. Memory is often defined as application of learning over time (May & Einstein,2013, p.3)

Over the last 50 years there has been an incremental growth concerning the issue whether memory should be referred as a unitary system or whether it should be decomposed in a complex structure with different divisions and purposes. From the mid-70's it was spreading the idea that memory could not run with a singular model picture, as studies coming from brain-damaged patients appeared to show a disorder between the ability to construct new long-lasting memories and completing tests, which instead required short term recollection of information (Baddeley, 1992).

Until today, memory has been matched to a computer and defined by an information-processing model in which data goes through three separate stages: encoding, storage, and retrieval. Additionally, Atkinson and Shiffrin (1968) theorized that information goes through three stages: sensory, short-term memory, and long-term memory.

Thus, sensory Memory indicates the brief storage of sensual information. Also, sensory memory is a memory storage that takes only very brief time and then, passing on for more processing, it will be forgotten. The aim of sensory memory is to make the brain to process the incoming sensations, and to see the world as an unbroken and continuous flow of events rather than as separate pieces.

In addition, short-term memory (STM) is an intermediate memory storage that starts processing of perceptual information transferred from sensory memory (Cognitive Psychology). Information that becomes the focus of attention changes from sensory memory to STM. Also, STM is called working memory (WM) is a system used to store and process information currently are thinking about. Whereas the capability of sensory memory is huge (e.g., everything in your visual field is stored in iconic memory, or everything that is sufficiently loud is stored in echoic memory), but the capability of WM is lesser. Typically, some of the information in iconic memory is designated for more processing in WM. While sensory memory functions unconsciously, WM has been defined by some as the recent contents of realization (May & Einstein,2013, p.14). Then, it allows a person to understand, restore, and manipulate information.It also permits people to temporarily process information that are previously learned in a class and access it to learn and associate new information.

Lastly, long-term memory is a compound resource that saves the individual's knowledge of facts, events, motor planning, control, and execution skills, letter form access and production skills, and language including vocabulary, spelling, grammar/syntax, and discourse schema, all of which are sources of knowledge that are important for competent writing (Hayes and Berninger). Furthermore, Chenoweth and Hayes (2001) showed that the fluency and the facility with which a person writes in a language depends highly on how many years of experience the person has with the language, to acquire all its aspects.

Writers with sufficient knowledge in long-term memory about the topic they are writing, they produce essays of higher quality and more quickly and with less effort than the less knowledgeable writers who are beginners and has short-term memory, means they are started gradually using their memory. Wherever they write texts containing errors, then they recognize them after learning and memorization process. Means writers or any skill learner begins by using the working memory to help their cognitive abilities work.

Moreover, cognitive abilities are one side of research in psychology variance concerned with identifying correlates of academic learning and lifetime success. CA are clearly unlike from emotional and conative factors, since the development and deterioration of memory, attentional, reasoning, and other cognitive abilities illustrate clear inverted U-shaped developmental paths across the life span, comparing to affect and conation (Robinson, 2011, p.1).

Earlier, working memory has been regarded to make a contribution to the acquisition and processing of language, also assisting an entire variety of complicated regular cognitive activities including reasoning, language understanding, long-term learning, and mental arithmetic.

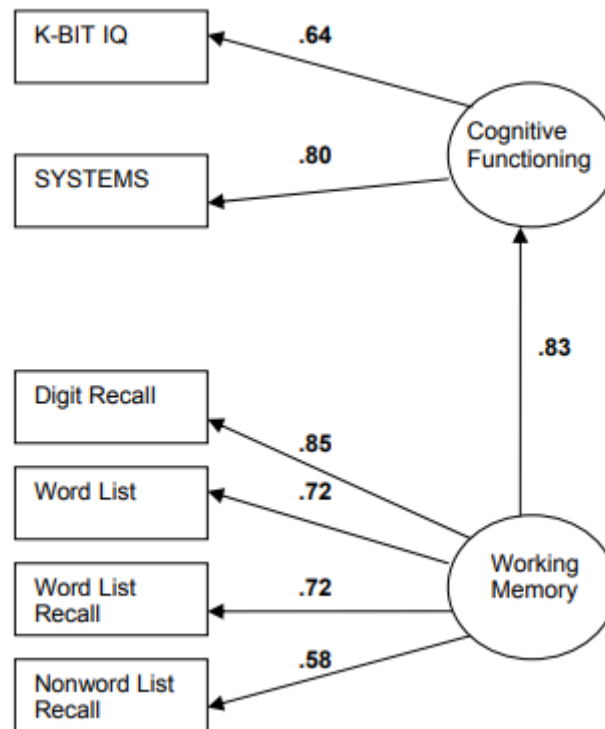
Modern theories of memory emphasizes that the working memory system is split into numerous components, each component has different abilities to transact with certain types of information. An example of the multi component approach is Baddeley's research (1981; 1990; 1992) (as cited in O'Connor, Spencer & Patton, 2003). He divided working memory into three main parts: the central executive, the articulatory or phonological loop, and the visuo-spatial sketchpad. It is suggested that the vital procedural working memory has a management role which is the control center of the system; it therefore chooses and operates the appropriate cognitive processes.

In addition, the central executive has a storage purpose with the effect that capacity limitations are applicable to this part of the system. Storage also arises in a different place in the system; the articulatory loop keeps verbal material through subvocal practice and the visuo-spatial sketchpad memorize imagery and spatial material through visualization. Lately, a modality-neutral storage component, the episodic buffer, has been put forward to deal with abstract representations of events (Baddeley, 2000).

Consequently, Baddeley (1986; 1974) formulated the phonological (or articulatory) loop, which includes one of two slave systems of his working memory model. The phonological loop involves of two components, a phonological store that holds auditory or verbal information for one to two seconds, and an articulatory control process that sustains information in the phonological store through subvocalized rehearsal. Likewise, the articulatory control process can recode visually presented information into a phonological code via subvocalization (Baddeley, 1992). Thus, the presentation of a picture or written word can be stored in the phonological loop by sub-vocally repetition of the name of the object or the word.

#### **A model of working memory and cognitive functioning, according to Byrne (2001)**

This measurement model, shown in Figure 1, details the proposed relationship between working memory and cognitive functioning. Assessment of the model (according to (Byrne, 2001)) showed that the model had feasible parameter estimates (all correlation estimates < 1.00), appropriate standard errors, appropriate critical ratio levels. As well as, maintains that the temporary storage and manipulation of information utilizes cognitive resources which are limited in their capacity. Also working memory may impact on cognitive functioning.



**Figure1. The measurement model of working memory and cognitive functioning.**

#### **4. The relationship between memory and spelling errors**

Each one in this world has experienced forgetting and having weak memorization and its consequences particularly in academic area while writing. It is usual to commit mistakes or errors in occurring some reasons are mentioned previously.

In spoken communication, when an individual produces an incorrect answer to a question and is then provided with the correct answer, they are considerably more likely to remember the correct answer when the initial error was made with high rather than low confidence his enhanced memory for corrective feedback to high-confidence errors is called the hypercorrection effect. It has been shown with children (Metcalf & Finn, 2011), young adults (Butterfield & Metcalfe, 2006)

Numerous theoretical attitudes about human memory propose that when people produce an answer that they state with confidence to be correct, they have no familiarity about those feelings of confidence of whether their answer is, in actuality, true or not. However, there is always the possibility that the ratings are made impulsively and could be made more accurately upon further deliberation (e.g., Buratti, Allwood, & Kleitman, 2013; Koriat, Lichtenstein, & Fischhoff, 1980).

Besides, signifying people's certainty about the accuracy of the answers they restore from memory are based on the mnemonic cues of self-consistency, accessibility, familiarity, and fluency, even though they may hardly be aware of relying on these cues. Koriat (2008) notes: "It might be futile to expect those metacognitive judgments such as feeling of knowing or subjective confidence would have privileged access to the correct target" (p. 954).

A study targeting to separate the effects of working memory and phonological skills on spelling found that working memory helps the person to reach to the prediction of early spelling ability and outperforms that of general intelligence and phonological decoding (Preßler, 2013). Previous lines signify that without phonological skills students may predict or write by the help of working memory and using more than intelligence to decode phonological items. In contrast to the combination between phonological memory and speech creation, spoken language understanding has been shown to be connected to the central executive factor of working memory (Adams, Bourke & Willis, 1999).

Nevertheless, the phonological performance of reading/spelling-matched children with reading incapacities is considered by an overreliance on phonological codes, whereas their equivalent performance reflects independent and less generalizable use of phonological substrates across tasks. Accordingly, working memory and phonological capabilities on spelling discovered that operating recollection allows the individual to reach to the prediction of early spelling capacity and outperforms that of popular intelligence and phonological

decoding. In contrast to the association between phonological memory and speech production, spoken language comprehension has been exposed to be connected to the central executive element of working memory.

However, many studies identify the importance of some visual strategy in spelling to remember the written form of words, especially for phonetically irregular words. Studies which changed the appearance of words, such as by using zig-zag or upper/lower case letters randomly, found that visual appearance affected spelling success (Tenney, 1980). Also, he found that when university students were not allowed to use paper and pencil to spell, they finger-wrote or air-wrote, suggesting they tried to envision the word concretely.

On the other hand, the receptive parts of orthographic processing have been denoted to as “memory for specific visual/spelling patterns” (Barker, Torgesen, & Wagner, 1992, p. 335). Thus, unconscious recognition of orthographic patterns in multi-letter units (e.g., syllables and morphemes) leads to fluent, effortless, and complete recognition of words (Wolf & Katzir-Cohen, 2001). Although expressive spelling skills and spelling recognition are significantly correlated (Cunningham & Stanovich, 1991), receptive and expressive orthographic acquisition might simplify different parts of reading development at different stages.

Then, a short-term memory measure was involved because it has been found to predict reading performance such as word reading and passage comprehension for average readers (Hansen & Bowey, 1994; Parrila, Kirby, & McQuarrie, 2004; Swanson, 1992; Swanson & Alexander, 1997).

Although all experiments and studies, still memory is not the only system makes the learner to memorize and remember items and images to draw down a correct graphemes and spelling needs more efforts concerning phonological performance in order to transform



phonemes into graphemes and to improve students' writing level by the aid of other features and abilities.

### **5. Cognitive abilities in identifying words and spelling errors**

Recent research, which has suggested that learning spelling needs a variation of cognitive processes and is achieved in different stages, provides a tool for identifying these students (Ganske, 1999; Kamhi & Hinton, 2000).

Both orthographic and phonological processing ability are likely, therefore, to play a role in students' spelling performance. A number of studies have explored cognitive factors that predict early spelling performance, where performance is measured only on the base of accuracy.

Cognitive learning theory is the core content of cognitive psychology research (Pierson, 2015). It confirms that learning is the interaction between old and new knowledge, which is the assimilation process of new and old knowledge in cognitive structure.

According to Zhang & Zhang (2019, p.1358) every learner will consciously or unconsciously mobilize his original knowledge and cognitive strategies when trying to complete a learning and cognitive task. It is extremely important for beginners to practice master correct pronunciation and words and practice the reading of stresses and intonations, which lays a good foundation in language learning.

It is explored in the teaching process that learners' knowledge of word construction is limited, and their control of root and affix of words can never facilitate in memorizing words. Cognitive thinking holds that students' knowledge background plays a huge role in students' short-term memory and teachers can guide students to compare homonyms, homonyms and homonyms, synonyms, synonyms and antonyms. When teaching English words, younger students tend to adopt innate teaching method. Therefore, it is easier for students to accept and

memorize new words by presenting them in physical objects. For older students, teachers can teach them methods such as induction and association, so that they can summarize, organize and memorize new words (Zhang& Zhang, 2019, p.1357)

If students want to master particular aspects of knowledge, they must adjust new knowledge to their present knowledge, that is, their original cognitive patterns. To acquire new knowledge mostly depends on the original suitable ideas in the cognitive structure, the contact between new and old knowledge, and the integration of new knowledge into the original cognitive structure. Then, every learner will consciously or unconsciously mobilize his original knowledge and cognitive strategies when trying to complete a learning and cognitive task. It is really important for beginners to practice to master correct pronunciation and words and practice the reading of stresses and intonations, which lays a good foundation in language learning.

The ability to spell words is naturally measured with traditional written spelling tests. However, just as with Reading Decoding, it can also be measured through spelling tests involving of phonetically regular nonsense words (e.g., “grodding”). It is worth noting that Carroll (1993) considered this factor to be weakly defined and in need of additional research.

Sometimes people face difficulties in hearing all sounds clearly so they need to follow the Phonetic Coding (PC) which is the ability to hear phonemes clearly. This ability is also stated as phonological processing and phonological awareness. People with poor phonetic coding have difficulty hearing the internal structure of sound in words (Schneider & McGrew, 2013)

In addition, the involvement of cognitive skills to spelling performance may vary across developmental populations with differing “etiology of dysfunction” or the occurrence of other cognitive difficulties. For instance, past studies investigating the contribution of phonological awareness, rapid naming, and working memory to the spelling and reading skills of students

with severe reading incapacities and growing incapacities found both unique and interfering influential cognitive skills for reading and spelling, suggesting that there are both shared and independent predictors for these skills. As well as, the relations sharing between cognitive abilities and word reading regulate the specificity of the results for spelling.

“Intelligence is the general set of cognitive abilities involved in performing a wide range of learning tasks” (Ellis, 2008, p. 649). In other words, it is “a general source of aptitude not limited to a specific performance area but is transferable to many sorts of performance” (Dörnyei, 2005, p. 32). Means that intelligence is a great assistant for students in recognizing the reality of things and performing accurately. intelligence reflects effectiveness of information processing skills or efficiency of cognitive functioning (Gottfredson, 2004).

However, Intelligence has different effects regarding various skills. There are low-level connections between intelligence and proficiency as measured by tests of listening comprehension and free oral production, but much higher correlations are found when proficiency is measured by tests of reading comprehension, dictation, and free writing. As well as, people within an extensive framework of IQs have confirmed to be successful in acquiring a second language. The reason may be linked to the role of intelligence in classroom language learning and its lack in real-life contexts (Brown, 2000). Though, intelligence impacts foreign language learning, but the degree and extent of it is not specified.

In addition, Cognitive factors control the meaning of language and also make sense of the linguistic system. Hence, language is resulting from cognitive progress, and more intelligence aids people acquire foreign language quicker and effortlessly.

Katzir et al (2006) claimed that students’ proficiency in spelling recognition, mediated by speedy sight reading to some extent, affords them more cognitive attention to the extraction of meaning from text.

As a result, cognitive skills include strategies the learner includes when encountering new subject that is required to be learned. Skills which are important such as concentration, categorization, memorization and reasoning.

## **6. Teachers' role in teaching and correcting spelling errors**

The foreign language teaching under the management of cognitive learning theory inspires teachers to study the internal psychological process of students in foreign language learning, which is helpful to cultivating the creative thinking and the capability of conscious autonomic learning of learning subjects.

Wherefore, teachers are required to understand the differences in students' cognitive styles in order to select various teaching approaches according to different cognitive styles. Then, students can independently discover the new words come across them in reading, guess the meaning of new words through superficial vocabulary processing, or find the meaning and fixed combination of new words by looking up the dictionary then, write them appropriately.

The most effective spelling interference's goal spelling directly and spelling results are found to consistently improve when there is obvious instruction with several practice opportunities and immediate corrective feedback (Graham et al., 2013; Sampaio & Capellini, 2014; Wanzek et al., 2006). Hence, error correction can be stated as any kind of feedback by a language teacher to correct error in the target language by learners (Light brown & Spada, 1999)

When applying cognitive psychology theory to English teaching, it is important to pay attention to the cognitive process of learners and how they process and use language information. The traditional sentence-making method is that the teacher indicates those cases that they have previously done and writes them on the blackboard and explains them in class.

Consequently, cognitive psychology theory has a good theoretical monitoring role for the teaching practice of English teachers. Therefore, teachers should be familiar to this aspect so that English classroom teaching can be more effective, and students' learning ability can be applied to encourage their learning.

Wherefore, awareness of cognitive style may be significantly valuable for teachers and instructional designers, as they can inform instructional decisions and teaching methods.

## 7. Cognitive assessment

The education policy defines assessment as the procedure of classifying, collecting and explaining information about a learner's accomplishment, as measured against generally agreed results for a certain stage of learning. As well as, it includes four steps: producing and gathering evidence of achievement, evaluating this evidence against the results, recording the findings of this evaluation, and using this data to support the learner's development and improve the process of learning and teaching (SA, 2004:32)

Furthermore, assessment ought to deliver significances of learner achievement in the major effective and competent manner, to guarantee that learners' development in their combination and application of knowledge and skills. Assessment ought also to aid learners to make decisions about their own performance, set goals for their own improvement, and prompt further learning.

Moreover, assessment improve and enhance cognitive control (metacognition) of own writing and spelling processes and products that helps in accurately and appropriately writing without spelling errors. Also, recognizing to reformulate the words from sounds and gain meaningful texts after continuous practicing and repetition of same words to develop and improve the learner's level in academic career.

The awareness and recognition of the symptoms of difficulties to learning needs, identification should lead the educator to the realization that the specific barrier or need that has now been recognized, has to be assessed in more detail with specific measures, in order to determine what would be the applicable measures of support for the learner.

In order to develop cognitively, learners need to develop the ability to use language to communicate their thinking, ideas, feelings and experiences, and to practice a variation of communication methods to do this, together with the use of audio-visual media and technology. Learners need to explore how language and literacy impacts on their social development and cultural beliefs.

Cognitive ability tests assess abilities comprised in thinking (e.g., reasoning, perception, memory, verbal and mathematical ability, and problem solving). Alike tests pose questions designed to estimate applicants' potential to use mental processes to solve work-related problems (Schaffler, 2007, p.17).

Conventionally, the general feature measured by cognitive ability tests is called "intelligence" or "general mental ability." However, an intelligence test frequently comprises several element types which measure different and extra specific mental factors often referred to as "specific mental abilities" such as: arithmetic computations, verbal analogies, reading comprehension, number series completion, and spatial relations (i.e., envisioning objects in three-dimensional space).

Traditional cognitive tests are well-standardized, hold items consistently scored, and can be managed to large groups of people at one time. Instances of item formats include several choices, sentence completion, short answer, or true-false. After these tests, the learners recognize their lacks and strengths in many aspects by using cognitive knowledge.

Accordingly, cognitive ability tests lead to the correct answers to all of the items to find an total score that signifies a measure of general mental ability. If an individual score is computed for each of the specific types of abilities (e.g., numeric, verbal, reasoning), then the resulting scores represent measures of the specific mental abilities.

Another method to assess students spelling which is Word Attack that assesses a student's skill to apply grapheme-phoneme rules and word analysis skills to pronounce unfamiliar printed words (i.e., phonetically regular nonwords or low-frequency words in the English language) (Katzir et al., 2006)

Every learner who is using cognitive knowledge will consciously or unconsciously organize his original knowledge and cognitive strategies when attempting to complete a learning and cognitive task. It is really principle for beginners to practice master correct pronunciation and words and practice the reading and the words forms.

In order learners be successful spellers, they need to participate in meta cognitive activities every day. Meta cognition refers to higher order thinking which encompasses active control over the processes involved in learning. Activities such as planning how to spell a word and then evaluating the spelling are metacognitive in nature. Metacognition can simply be defined as "thinking about thinking" (Livingston, 1996).

As Hayes and Berninger (2014) clarify, the procedure of written structure draws on cognitive resources including attention, and short-term and long-term memory. With these cognitive resources concentrated on producing ideas, decoding them into syntactically accurate sentences, and constructing reasonable arguments, fewer cognitive resources can be allocated to spelling. Thus, misspellings are more expected and these spelling patterns could be qualitatively different than the misspellings on a single word test.

The distinction between the cognitive device used to proceed spelling rules and the cognitive device used to learn about them. This difference may explain why teachers' levels of knowledge about spelling patterns are not a reason related to students' spelling performance.

### **Conclusion**

Researches demonstrated and proved that cognitive abilities are important in learning particularly in writing and reading, because the latter are related to each other. this process is occurred by using human memory in thinking, transmitting and shaping. As well as, it supports to reasoning, awareness, memory, verbal and mathematical ability, and problem solving. Moreover, students should be cognized with these cognitive abilities and strategies to know how to use their intelligence and memory in memorizing subjects and forms. In addition, cognitive allows to assess learners' errors effectively and in new ways; therefore, language teachers should be aware to this process so that they will be able to properly and timely correct inappropriate and unacceptable utterances of different types of errors that committed by EFL learners in writings. Thus, following previous processes allow students to improve their English writings in general, and improve their spelling.



## **Chapter Three**

### **Field Work and Data Analysis**

## **Chapter Three: Field work and data analysis**

### **Introduction**

This chapter discusses the main findings of the study and the conclusions that can be drawn from them. It aims to investigate the main reasons and challenges faced by third year License students in spelling. As well as the types of spelling occurred in their writings and the strategies and methods used to decrease spelling errors. In addition to, analyzing two questionnaires, students' answers to and teachers' responses to questions provided. These questions were posed to conduct our investigation, collect data and verify the validity of our hypothesis. Finally, it will attempt to provide recommendations and suggestions for further research.

### **1. Review of Research Methodology**

#### **1.1. Research method**

In order to undertake this study, a descriptive analytic method is the most appropriate method that suits the nature of our research. Also, a qualitative approach is employed to obtain the data needed for the accomplishment of this study. The quantitative data collected through the questionnaires helps to provide a summary of the qualitative data about the relationship between cognitive abilities and spelling errors and the way to errors' reduction.

#### **1.2. Population and Sample of the study**

As sample of thirty-five (35) third year LMD at the division of English at Biskra University for the academic year 2020-2021 were randomly selected and responded to the students' questionnaire in order to conduct our research, because those students have experienced learning English, and have accomplished six full semesters by experiencing the learning of

written expression and its aspects which is chosen in this research. Likewise, eleven (11) teachers were selected on the basis that they are teachers of written expression module to provide us with their valuable experience and opinions through responding to a questionnaire. The selection of such samples was based on the observation that many students do such errors from the beginning of their studying English career, and in order to improve their language in general, and doing well in written expression course (write their paragraphs accurately free from spelling errors and writing their dissertation appropriately in the future of their career).

### **1.3. Data gathering tools**

For the purpose of conducting this research tool, it is used in this study is an open-ended and closed-ended questions (semi-structured questionnaire). It has been sent to a sample of third year students of English as well as a sample of teachers in the division of English at Biskra University. The aim behind using this tool was to collect qualitative data and both samples' opinions and attitudes about our research topic to attempt ending up with precise results.

## **2. Student's questionnaire**

### **2.1. Aims of the questionnaire**

The students' questionnaire was mainly designed to find out the major spelling errors types as well the reasons and the obstacles behind them. In addition to the role of the teacher in correcting and dealing with students' errors. Finally, looking for, if students are knowledgeable with phonemic awareness and the position of memory to help them solve this problem.

## 2.2. Description of the questionnaire

This questionnaire was addressed to a representative sample of third year students of English at Biskra University. It comprised of twenty-one (23) of questions. They involved three types of questions: Closed questions, open-ended and multiple-choice questions. Closed questions required answers with dichotomies (yes/no questions), or picking up the most appropriate answer from a series of options (general information and level). On the other hand, open-ended questions required students to give their personal point of views about the subject or to explain their choices. Also, multiple choice aims to select different answers for one instruction.

## 2.3. Administration of the questionnaire

Due to the situation, the conditions of this exceptional year and the spread of the pandemic COVID-19, as well as the lack of attendance of all students. Questionnaires were posted online on Facebook on the group of 'Promo 2018' for third students but the question. The questionnaire received 35 responses. On the other hand, teachers' questionnaires were sent via Gmail to each teacher (received eleven responses).

## 2.4. Analysis of the questionnaire

The procedure of analyzing data from the questionnaire was as follows:

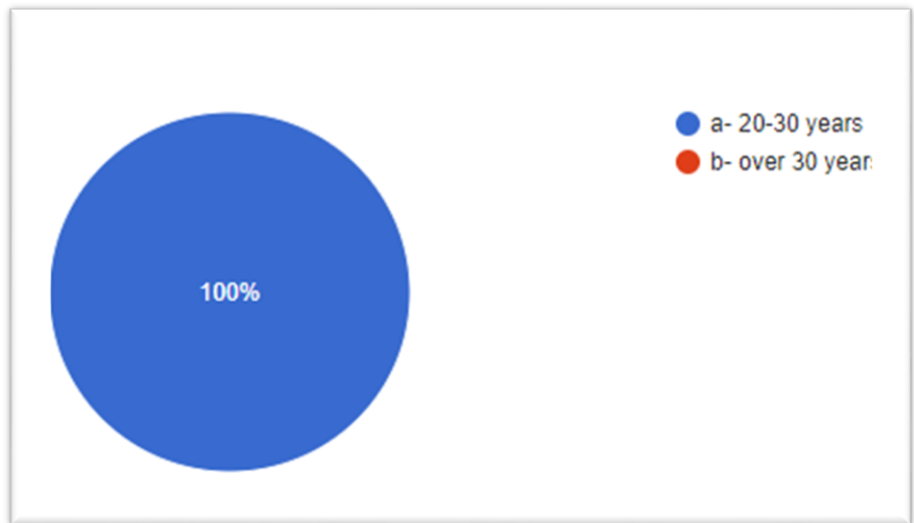
- ✓ Statement of the questionnaires as they appear.
- ✓ The results of the questions are presented in the form of tables and graphs

### Item 01: Students' age

Age	Frequency	Percentage
20-30 years old	35	100%
over 30 years old	0	0

<b>Total</b>	<b>35</b>	<b>100%</b>
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**Table01: Students' age**



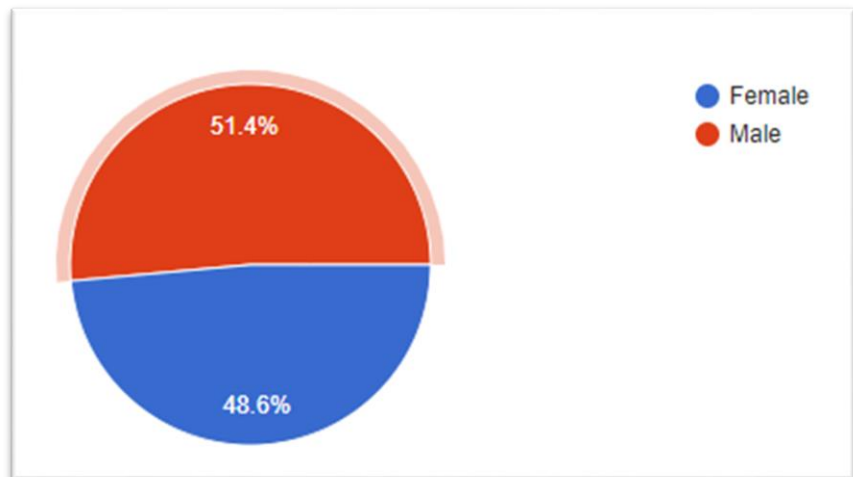
**Figure 01: Students' age**

From table 1 and figure 1, it is noticed that all participants are aged from 20 to 30 years old rated 100%. In the choices label it is given other choice which is “age over 30 years old” because it is possible to find students at this age at university. However, this case there is only young students.

**Item02: students' gender**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Female</b>	<b>17</b>	<b>48.6%</b>
<b>Male</b>	<b>18</b>	<b>51.4%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table02: Students' gender**



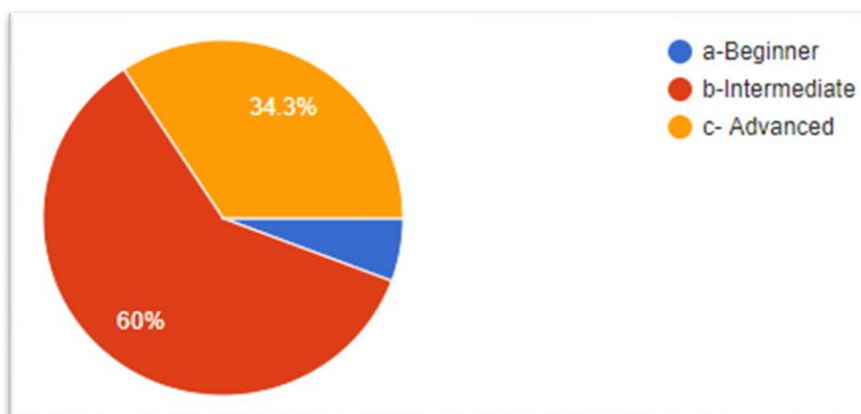
**Figure02: Students' gender**

From table 2 and figure 2, it is noticed that the highest participants gender are males (51.4%). Females are less (48.6%). Means that males were more attending than females during the research.

**Item03: Students' consideration of their level in English**

Options	Frequency	Percentage
Beginner	2	5.7%
Intermediate	21	60%
Advanced	12	34.3%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table03:Students' consideration of their level in English**



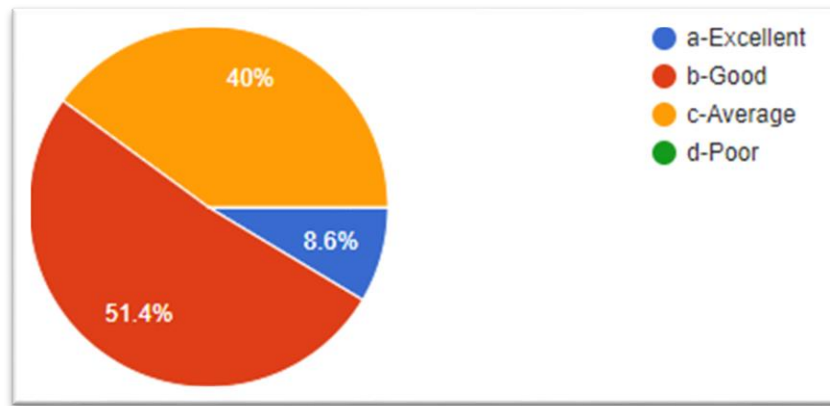
**Figure03: Students' consideration of their level in English**

Both table3 and figure3 show the difference of level between students. (60%) shows the highest percentage of students' whose responses are intermediate level in English, they are neither in the top nor in the bottom. Others (34%) showed that they are advanced in English whereas few of them (5.7%) said that they are beginners.

**Item04:Students' consideration of their level in writing**

Options	Frequency	Percentage
Excellent	3	8.6%
Good	18	51.4%
Average	14	40%
Poor	0	0
Total	35	100%

**Table04: Students' consideration of their level in writing**



**Figure04: Students' consideration of their level in writing**

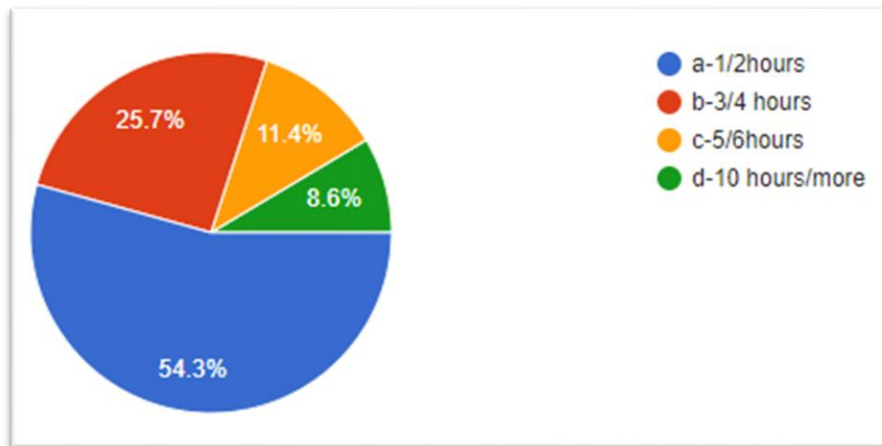
The table and figure 04 aim to identify the students' level in writing through self-rating. Most students (51.4%) rate their level as good. Others (40%) claim to have average writing level while the rest (8.6%) consider their level as low.

**Item05: Hours that students spend in reading per a week**

Options	Frequency	Percentage
1/2 hours	19	54.3%
3/4 hours	9	25.7%
5/6 hours	4	11.4%
10 hours /more	3	8.6%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table05:Hours that students spend in reading per a week**





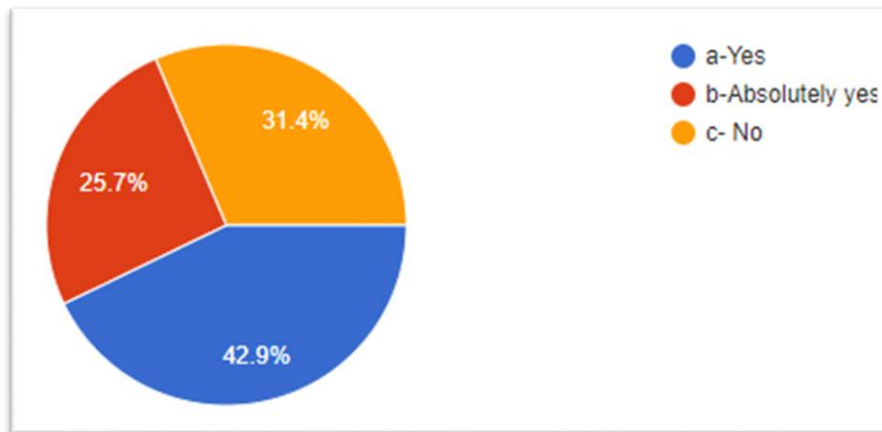
**Figure05: Hours that students spend in reading per a week**

The question is about how many hours students spend while reading in period of week. The results found reveal that the majority of students (54.3%) read only one to two hours while the second portion (25.7%) read three to four hours. However few students (11.4%) read five to six hours in a week. the smaller number of students who read more than ten hours are rated (8.6%).

**Item06: While facing new words in reading, do you rewrite them to improve your level in writing?**

Options	Frequency	Percentage
Yes	15	42.9%
Absolutely yes	9	25.7%
No	11	31.4%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table06: Rewriting new words during reading process**



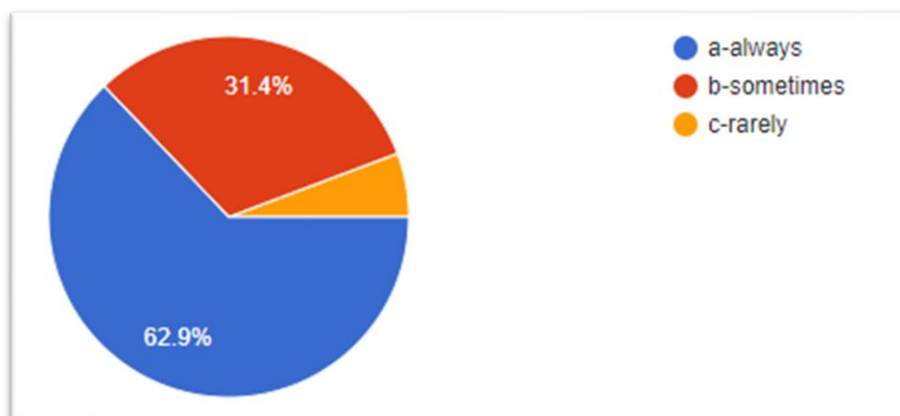
**Figure06: Rewriting new words during reading process**

The majority of questioned students (42.9%) claimed that they rewrite the new words they face while reading to improve their level, others (25.7%) confirmed that they rewrite the words absolutely without doubt. They believe that through this method they rehearse the words spelling. The least portion (31.4) denied that they do not rewrite the words by responding “No”.

**Item07: How often do you care about your spelling?**

Options	Frequency	Percentage
Always	22	62.9%
Sometimes	11	31.4%
Rarely	2	5.7%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table07: Frequency of students who care about their spelling**



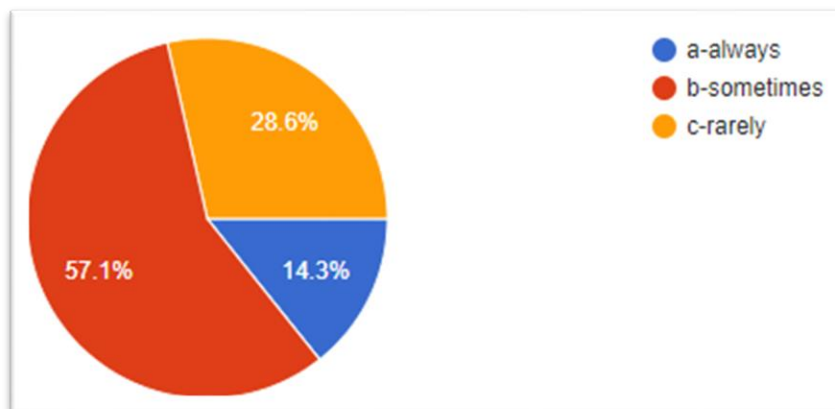
**Figure07: Frequency of students who care about their spelling**

The results of this question show the majority of students (62.9%) are always interested in caring about their spelling. Others (31.4%) they sometimes care and being careful about their spelling and writings. the less number (5.7%) they rarely care about their spelling, they just write the words as they know.

**Item08: How often do you commit spelling errors?**

Options	Frequency	Percentage
Always	5	14.3%
Sometimes	20	57.1%
Rarely	10	28.6%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table08: Frequency of committing spelling errors**



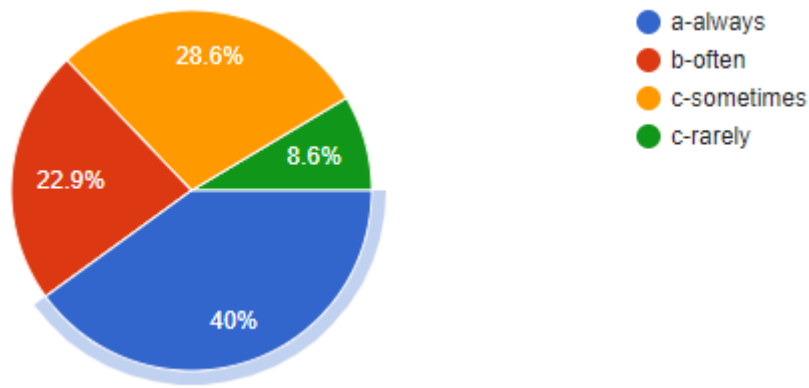
**Figure08: Frequency of committing spelling errors**

We notice that the highest percentage of students (57.1%) who claimed that they sometimes commit spelling errors during writing. The next percentage of students (28.6%) who always commit spelling errors, they might be poor at writing and they rarely read. The last is (14.3%) students who rarely do spelling errors, those who may read more than ten hours per week.

**Item09: How often do you read your literary texts before submitting it?**

Options	Frequency	Percentage
Always	14	40%
Often	8	22.9%
Sometimes	10	28.6%
Rarely	3	8.6%
Total	35	100%

**Table09: Frequency of reading a literature before submitting**



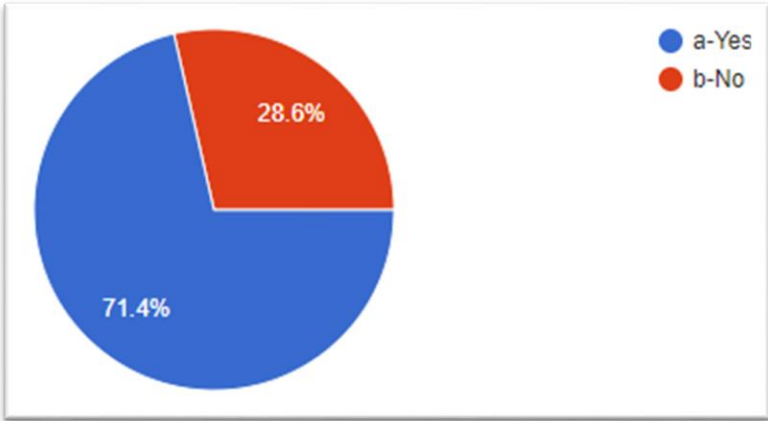
**Figure09: Frequency of reading a literature before submitting**

When students write a text or a composition they may fall into errors because they do not revise it before submit it. Though, the highest percentage (40%) is those who always reread their literatures. Students who sometimes read their literary texts are rated (28.6%). Next are students who often reread their writings (22.9%). The small portion (8.6%) is those who rarely read their texts.

**Item10: Students' difficulties in spelling**

Options	Frequency	Percentage
Yes	25	28.6%71.4%
No	10	
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table10: Students' difficulties in spelling**



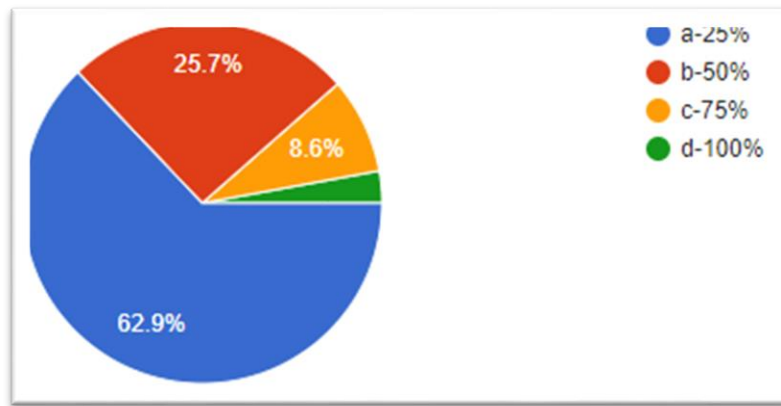
**Figure10: Students' difficulties in spelling**

As demonstrated in the table, the majority of students have difficulties in spelling numbered (71.4%) whereas students who do not face difficulties are (28.6%). This depends on the reading skill to recognize new words.

**Item10.1: Rating the difficulties**

Options	Frequency	Percentage
25%	22	62.9%
50%	9	25.7%
75%	3	8.6%
100%	1	2.8%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table10.1:Rating the difficulties**



**Figure10.1: Rating the difficulties**

This sub question rates the percentage of students by themselves showing that the most rate is (62.9%) which refer to students who do not face difficulties only 25%, they write accurately. Then students who face 50 % difficulties are (25.7%) and the ones who face more in rate 75% its percentage is (8.6%) are few but the least are the ones who face difficulties 100% which means their writings full of spelling errors are (2.8%).

**Item11: Kinds of difficulties faced in spelling (types of errors):**

Options	Frequency	Percentage
<b>a-Insertion (adding one letter or more)</b>	<b>5</b>	<b>14.3%</b>
<b>b-Substitution (replacing one or more letters with incorrect ones)</b>	<b>5</b>	<b>14.3%</b>
<b>c-Omission (deleting one or more letters)</b>	<b>4</b>	<b>11.4%</b>

<b>d-Transposition (reversing the position of letters)</b>	<b>5</b>	<b>14.3%</b>
<b>b + d</b>	<b>2</b>	<b>5.7%</b>
<b>c + d</b>	<b>4</b>	<b>11.4%</b>
<b>a + b</b>	<b>3</b>	<b>8.6%</b>
<b>a + c + d</b>	<b>2</b>	<b>5.7%</b>
<b>a + b + c</b>	<b>3</b>	<b>8.6%</b>
<b>a + b + c + d</b>	<b>2</b>	<b>5.7%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

Table11: Students’ types of errors

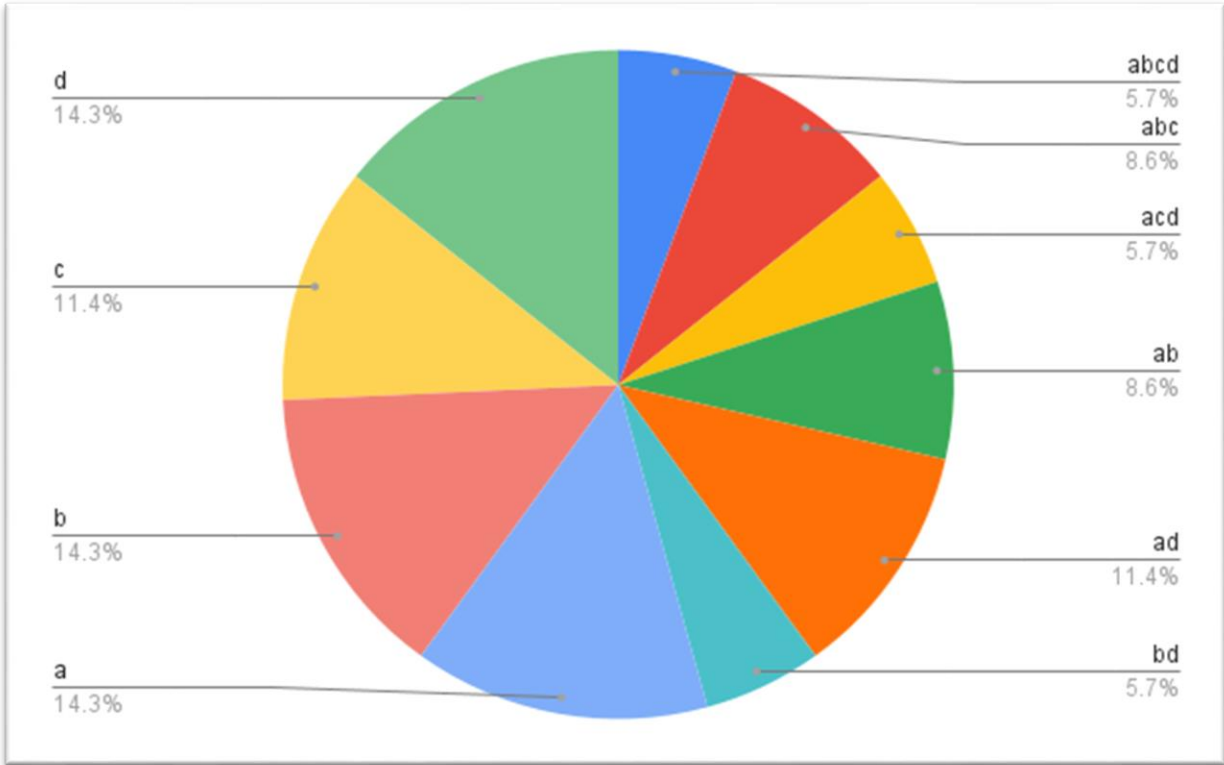


Figure11:Students’ types of errors



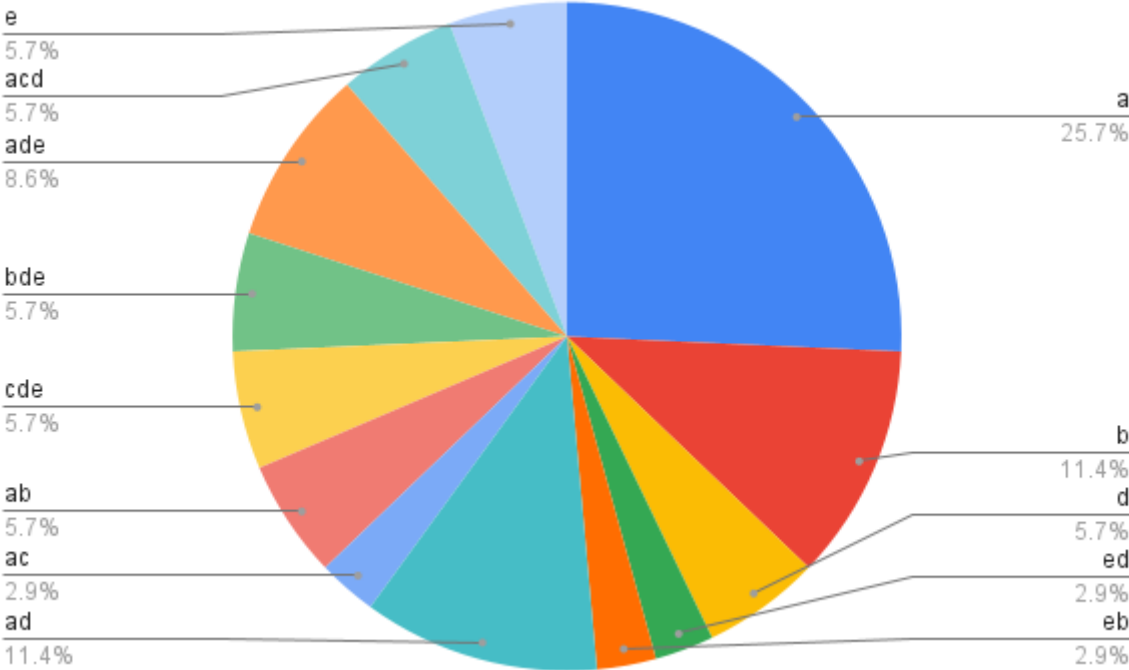
As shown above in the table and the graph, students seem have many multiple types of spelling errors in common. The majority of students are common in adding letters, replacing one or more letters with incorrect ones and reversing the position of letters are most challenging types in students' writings and found to be equally faced (14.3%). Followed by omission (11.4%) where students delete letters from words. Many students share the same difficulties in spelling but insertion, substitution and transposition are considered one of the basic yet most challenging aspects of spelling. Therefore, students still need more instruction and practice of these three types.

**Item12: The main reasons of students spelling errors**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>a-spelling is not actually taught as an aspect of English language.</b>	<b>9</b>	<b>25.7%</b>
<b>b-you don't take the pain to go through your works after writing.</b>	<b>4</b>	<b>11.4%</b>
<b>c-there are few books that</b>	<b>0</b>	<b>0</b>

<b>emphasize spelling rules in the school library.</b>		
<b>d-some teachers lack in teaching spelling.</b>	<b>2</b>	<b>5.7%</b>
<b>e-many teachers sometimes seem to commit spelling errors while writing on the board.</b>	<b>2</b>	<b>5.7%</b>
<b>d + e</b>	<b>1</b>	<b>2.9%</b>
<b>b + e</b>	<b>1</b>	<b>2.9%</b>
<b>a + d</b>	<b>4</b>	<b>11.4%</b>
<b>a + c</b>	<b>1</b>	<b>2.9%</b>
<b>a + b</b>	<b>2</b>	<b>5.7%</b>
<b>c + d + e</b>	<b>2</b>	<b>5.7%</b>
<b>b + d + e</b>	<b>2</b>	<b>5.7%</b>
<b>a + d + e</b>	<b>3</b>	<b>8.6%</b>
<b>a + c + d</b>	<b>2</b>	<b>5.7%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table12:The main reason of students spelling errors**



**Figure12: the main reason of students spelling errors**

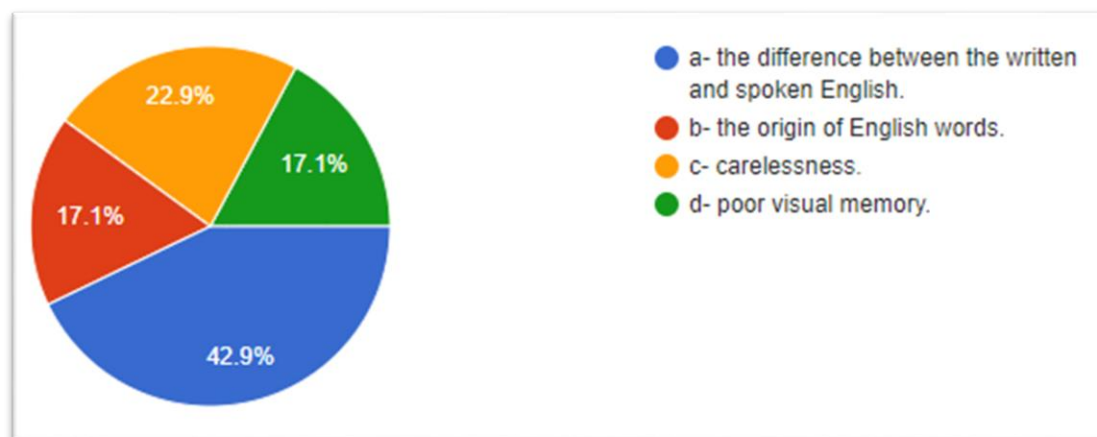
As the tabulated results and the chart above show, students seem have many multiple opinions in common about the reason of spelling errors. Spelling is not actually taught as an aspect of English language is the most reason that (25.7%) claimed about, so it is helpful to add a spelling session. Then students who does not take the pain to go through their works after writing followed by the option of some teachers lack in teaching spelling are found to be equal (11.4%). Through these results it is concluded that students should be taught spelling and they revise their works after writing and teacher correction.

**Item13: The most obstacle faced while writing**

Options	Frequency	Percentage
the difference between the written and spoken English.	15	42.9%

<b>the origin of English words.</b>	<b>6</b>	<b>17.1%</b>
<b>carelessness.</b>	<b>8</b>	<b>22.9%</b>
<b>poor visual memory.</b>	<b>6</b>	<b>17.1%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table13: The most obstacle faced while writing**



**Figure13: The most obstacle faced while writing**

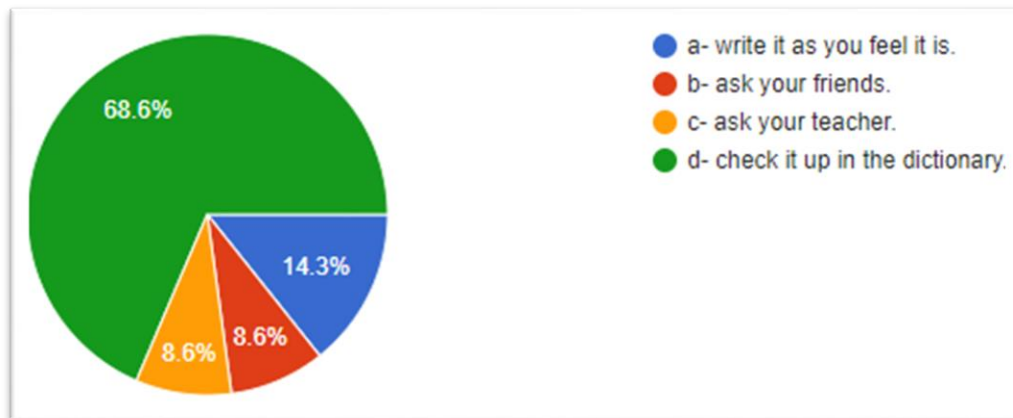
The most obstacle that students face in spelling words is the difference between the written and spoken English which took a percentage of (42.9%) because the pronunciation of most English words are not the same as they are written. The second obstacle is carelessness (22.9%), Students are lazy to correct or care about their spelling while writing they only want to write to finish the work no matter if it is correct or no. The last obstacles which took the same percentage (17.1%) are the origin of English words and poor visual memory, few students who suffer from poor visual memory they cannot remember the words' forms. These kinds of students need strategies to develop their memory.

**Item14: What do you do if you do not know how to spell a word?**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>write it as you feel it is.</b>	<b>5</b>	<b>14.3%</b>

<b>ask your friends.</b>	<b>3</b>	<b>8.6%</b>
<b>ask your teacher.</b>	<b>3</b>	<b>8.6%</b>
<b>check it up in the dictionary.</b>	<b>24</b>	<b>68.6%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table14: A way to spell unknown word**



**Figure14: A way to spell unknown word**

The findings of the table reveal that the generality of students (68.6%) when facing a new word, they spell it as they feel it is without asking anyone might be because some of them are shy of asking the teacher or their friends. The next way to write a new word is checking it up in the dictionary (14.3%) to be aware about all features of the word (spelling, meaning and phonetic transcription). The least number of students who ask their teacher or their friend got the same percentage (8.6%), this category seeks of the spelling of the word by asking others with no external factor.

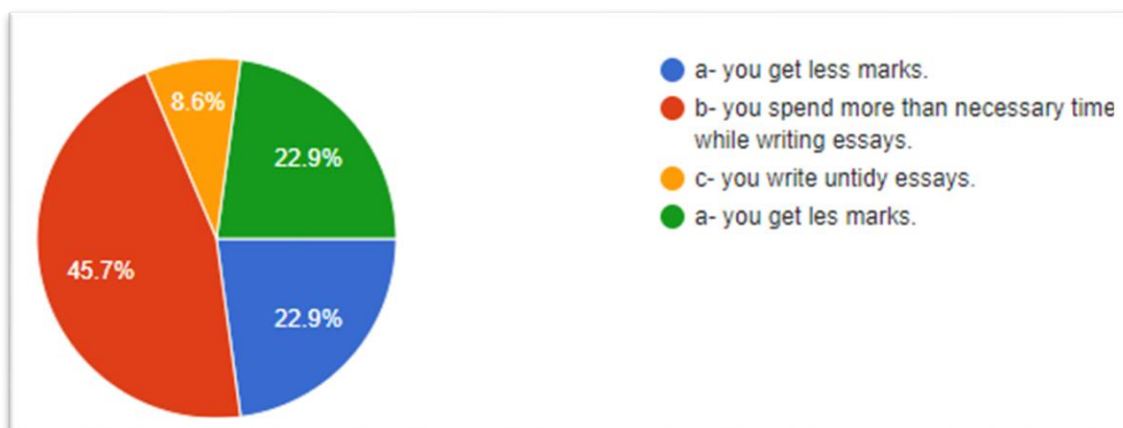
**Item15: Consequences of committing spelling errors**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>you get less marks.</b>	<b>16</b>	<b>45.7%</b>

<b>you spend more than necessary time while writing essays.</b>	<b>16</b>	<b>45.7%</b>
<b>you write untidy essays.</b>	<b>3</b>	<b>8.6</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table15: Consequences of committing spelling errors**

According to the table, it is noticed that students get less marks when they commit spelling errors is rated (45.7%) as the students who commit such errors, they spend more than necessary time while writing by revising and verifying the errors (45.7%). The lowest percentage is (8.6) when students commit errors they write untidy essays, this also affect their level.



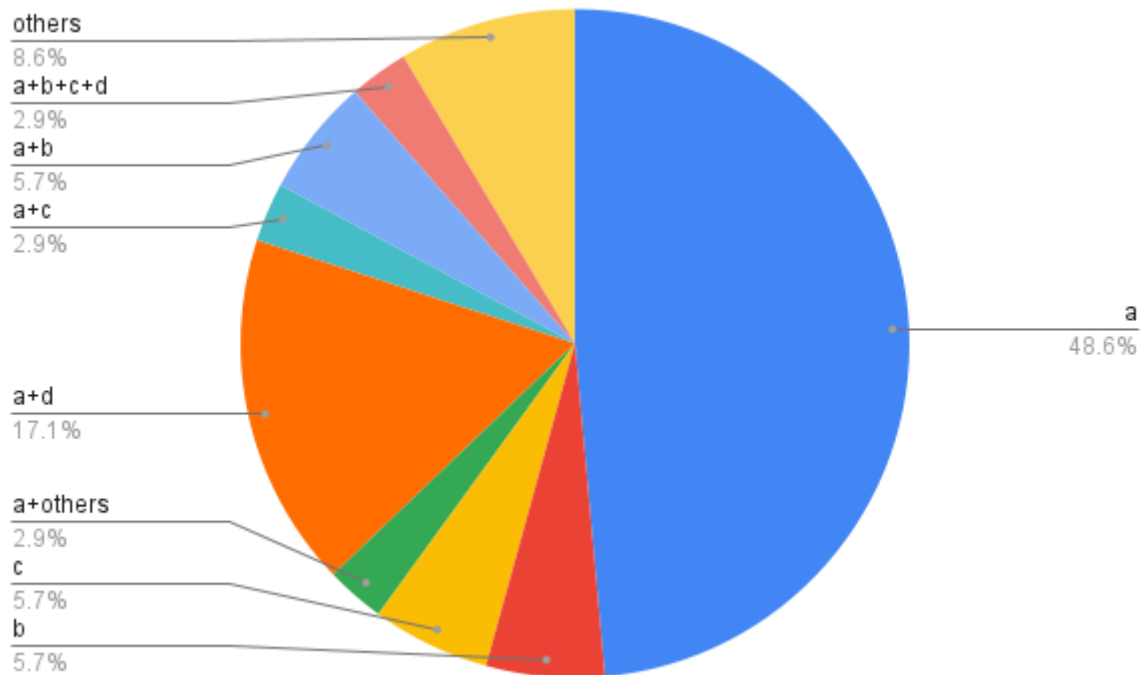
**Figure15: Consequences of committing spelling errors**

**Item16: Methods used in learning spelling**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
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<b>a-rereading the word to memorize its spelling.</b>	<b>17</b>	<b>48.6%</b>
<b>b-using pictures in remembering different words.</b>	<b>2</b>	<b>5.7%</b>
<b>c-create a set of flashcards and writing sentences.</b>	<b>2</b>	<b>5.7%</b>
<b>d-learn a few rules.</b>	<b>0</b>	<b>0</b>
<b>Others</b>	<b>3</b>	<b>8.6%</b>
<b>a + d</b>	<b>6</b>	<b>17.1%</b>
<b>a + c</b>	<b>1</b>	<b>2.9%</b>
<b>a + b</b>	<b>2</b>	<b>5.7%</b>
<b>a + b + c + d</b>	<b>1</b>	<b>2.9%</b>
<b>a+ others</b>	<b>1</b>	<b>2.9%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table16: Methods used in learning spelling**



**Figure16: Methods used in learning spelling**

**Others indicate:**

-write the word on my hand.

-Comparing it to the same word in French which makes it a lot easier because saying the word is almost as its written form in French (Not always though).

-Linking it with anything to memorize it.

-Learn spelling words

This question requires from students to identify the most method they use in learning spelling to know which one is better and helpful. Students appear that they have many multiple methods in common. The most number (48.6%) follow rereading the word to memorize its spelling method. Also, this method is combined with learn a few rules method, which percentage together is (17.1%) means that students use both methods to learn spelling accurately. While using pictures in remembering different words and creating a set of

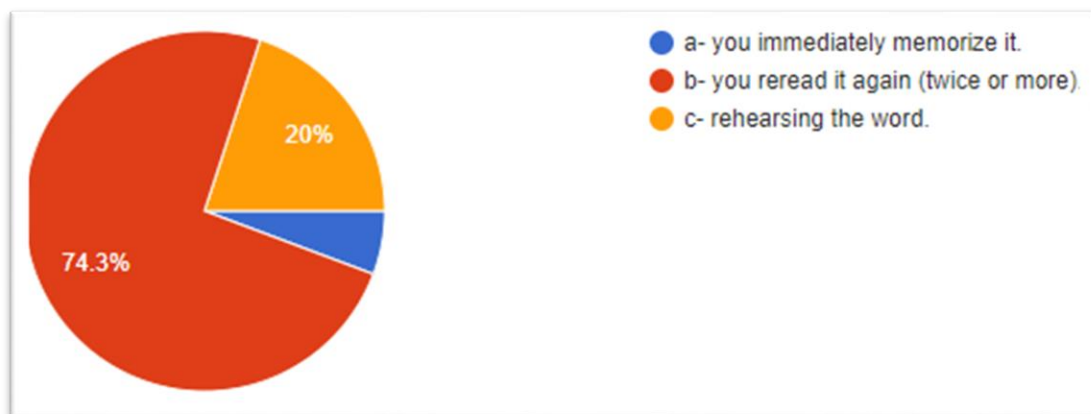


flashcards and writing sentences methods are equal (5.7%) but not followed by many students. However, others suggested other methods such as comparing the word to the equivalent in French which makes it easier because saying the word usually is almost as its written form in French as well as linking the word with anything to memorize it.

**Item17:What to do when seeing a new word?**

Options	Frequency	Percentage
you immediately memorize it.	2	5.7%
you reread it again (twice or more).	26	74.3%
rehearsing the word.	7	20%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table17: students' dealing with new words**



**Figure17: students' dealing with new words**

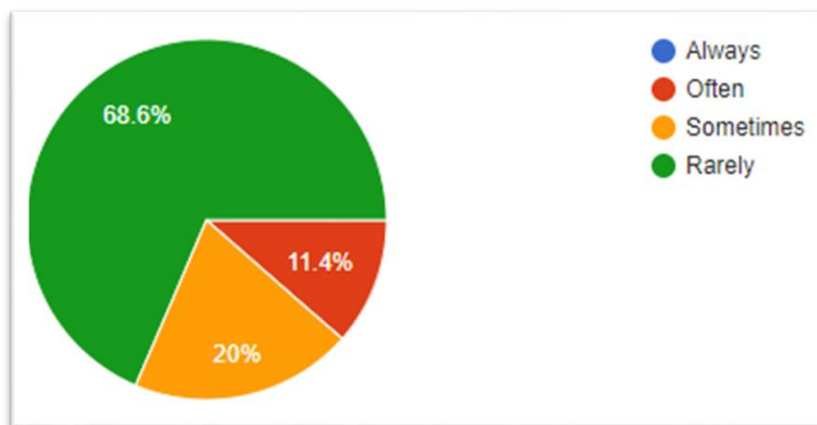
While reading students face new words, each one has a way to deal with them. From this table above we notice the majority of students (74.3%) reread the words many times to memorize them. The second portion is the students who rehearse the word (20%) in order to

remember it. The last one is the students who immediately memorize the word while reading but its percentage is low (5.7%).

**Item18: Does the teacher specialize a spelling session?**

Options	Frequency	Percentage
Always	00	00%
Often	4	11.4%
Sometimes	7	20%
Rarely	24	68.6%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table18: Specializing a spelling session**



**Figure18: Specializing a spelling session**

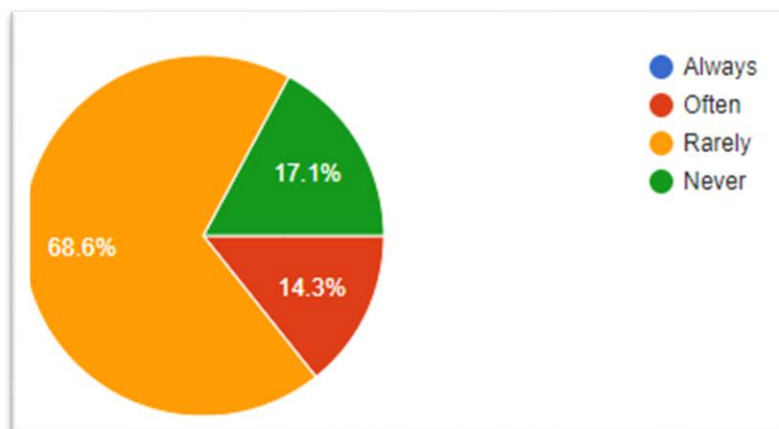
The obtained results show that (66.6%) of students affirmed that their teachers rarely do a spelling session, it is a huge percentage that may confirm the spelling errors made by students.(20%) of the sample opted for “sometimes” whereas fewstudents (11.4%) said that they often have sessions for spelling. However, the option ‘always’ has no respondents (0%) means no teacher teach spelling in all classes.

These findings show that students have different teachers who do not rely on spelling at the same extent. This depends on each teacher’s priorities in terms of lesson/course objectives, students’ needs, time, etc.

**Item19: discussing students’ spelling errors with the teachers**

Options	Frequency	Percentage
Always	00	00%
Often	5	14.3%
Rarely	24	68.6%
Never	6	17.1%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table19: discussing students’ spelling errors with the teachers**



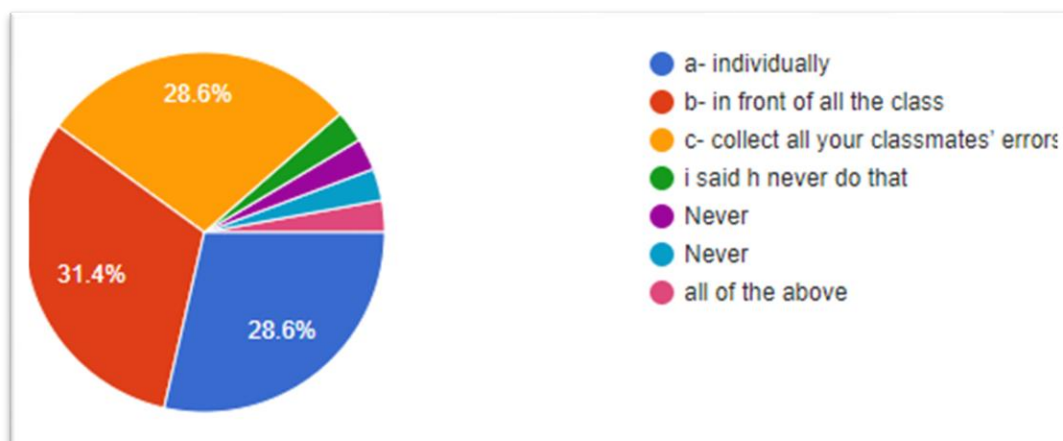
**Figure19: discussing students’ spelling errors with the teachers**

These findings are concerned with the frequency of discussing spelling errors between teacher and students in class. The results show that the majority of students (68.6%) rarely discuss their errors with their teachers while (17.1%) claimed that never do. The minority of students (14.3%) reported that they often discuss their errors with teachers. Though the remained choice ‘always’ is not chosen.

**Item19.1: The way of discussing the errors between teachers and students**

Options	Frequency	Percentage
Individually	10	28.6%
in front of all the class	11	31.4%
collect all your classmates' errors	10	28.6%
Others (never-all of the options)	4	11.4%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table19.1: The way of discussing the errors between teachers and students**



**Figure19.1: The way of discussing the errors between teachers and students**

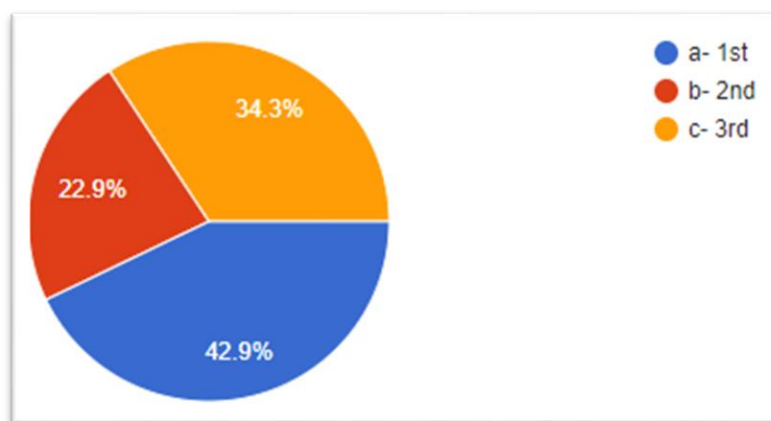
This question attempts to identify the ways or methods that each teacher discusses the errors with his/her students. The results show that the majority (31.4%) reported that their teachers discuss the spelling errors in front of all the class. Two portions rated the same percentage but different options, the first one (28.6%) responded that their teachers discuss with them individually means that the teacher discusses with each student his/her errors. The

other equal portion (28.6%) claimed that the teachers collect all the class errors and discuss together. The remaining percentage (11.4%) is concerning students who selected ‘others’ option and gave their own answer, three students asserted that their teachers never discuss their errors while one student confirmed with all the ways his/her teachers do.

**Item19.2: The preferable way to students**

Options	Frequency	Percentage
1 <sup>st</sup> Individually	15	42.9%
2 <sup>nd</sup> Infront of all class	8	22.9%
3 <sup>rd</sup> collect all your classmates’ errors	12	34.3%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table19.2: The preferable way to students**



**Figure19.2: The preferable way to students**

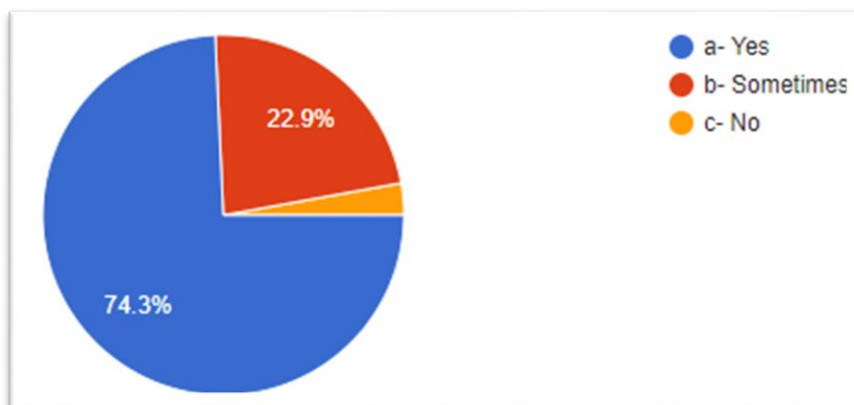
The figure above indicates that (42.9%) of students prefer to discuss errors with their teachers individually. Whereas (34.3%) their favor way that their teacher collects all the spelling errors of class and discuss all together to benefit from others’ mistakes and errors. However, the minimal percentage (22.9%) is students who chose the way of discussing their errors in front of all the class by name. These ways aim to indicate all students’ errors to others to know all types that students would never commit again.

**Item20: Taking into consideration the teacher’s remarks**

Options	Frequency	Percentage
Yes	26	74.3%
Sometimes	8	22.3%
No	1	3.4%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table20: Taking into consideration the teacher’s remarks**

The table above indicates that the greatest number of students (74.3%) take their teachers remarks and notes into consideration because the teachers as guiders and professionals which leads them to learn more about spelling and write accurately in the future. Other respondents (22.3%) stated that they sometimes take the teacher remarks into consideration. But the last portion (3.4%) responded by they do not take into consideration the teachers’ remarks.



**Figure20: Taking into consideration the teacher’s remarks**

**-Clarifications about students’ responds of taking teachers remarks into consideration:**

For this open-ended question, students mentioned different explanations about why they chose the previous answers:

- Teachers are the mentors, guiders, sources and more knowledgeable in this equation and they are professionals in giving advice

- Their remarks are very helpful
- The teacher has a great role at class.
- In order to remember the advice and do not do the same mistakes again.
- To minimize spelling errors
- learning new vocabularies and learning from mistakes.

**-Clarifications of students who do not take teachers remarks into consideration:**

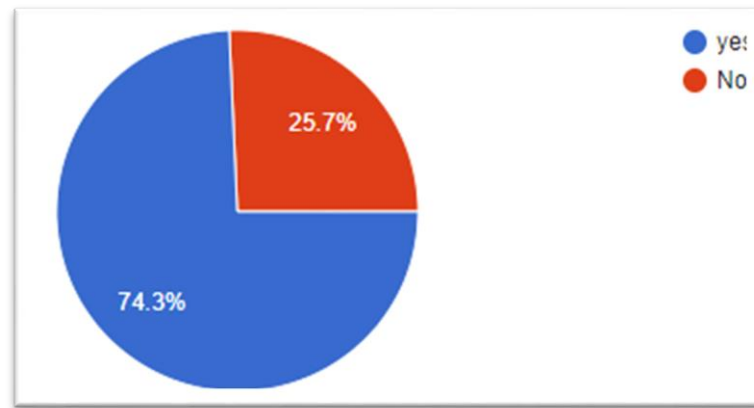
- I just take what suits me the most because the strategies that the teacher may give you won't really be beneficial to everyone.
- Most of the time their advices are far away from student's needs.
- Carelessness.
- It never defines the true level.
- Due to lack of motivation
- It depends on the teacher's capacity.

Clearly students discussed the strategies and the methods that may help pr not help them in correcting their spelling errors at class. The majority found the teachers' remarks helpful and important for their writings. However, the minority claimed that they are not in need to them depends on their level.

**Item21: Students' opinion about the need of adding a spelling session to the program**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	<b>26</b>	<b>74.3%</b>
<b>No</b>	<b>9</b>	<b>25.7%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table21: Students' opinion about the need of adding a spelling session to the program**



**Figure21: Students' opinion about the need of adding a spelling session to the program**

The results above reveal that the majority of students (74.3%) said that adding a spelling session to the program so that they see it as an important element of study. Although the other portion of students (25.7%) reported that it is not important to add an extra session of spelling.

**Students' justification of their answers:**

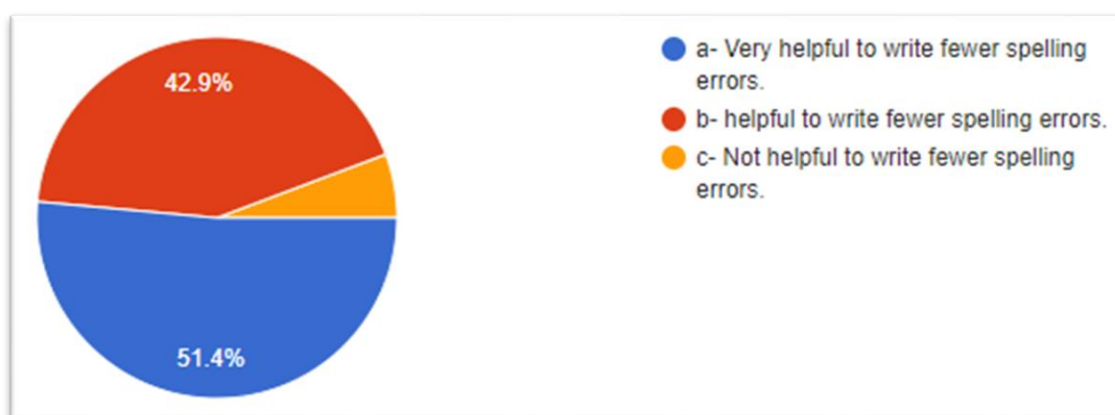
- The session will be beneficial to minimize the spelling errors.
- Because there is a lot of people till now, they are struggling in spelling words incorrectly so it is important to add a spelling session in the program also it's so helpful for the students
- It depends on the teacher's capacity.
- Because it helps in writing after.
- To minimize spelling errors
- It can make a difference but “we” do not want more sessions.
- We cannot devote a whole session for spelling we just need to make some time for spelling almost 15 or 20 minutes it will be enough.
- It should be included in the teaching of each module, not devote a whole session for it.

**Item22: The aid of recognizing phonemic awareness**



Options	Frequency	Percentage
Very helpful to write fewer spelling errors.	18	51.4%
Helpful to write fewer spelling errors.	15	42.9%
Not helpful to write fewer spelling errors.	2	5.7%
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table22: The aid of recognizing phonemic awareness**



**Figure22: The aid of recognizing phonemic awareness**

The findings confirmed that the majority of students (51.4%) said that phonemic awareness is very helpful to write fewer spelling when they are aware about phonemic awareness, they know the phonetic transcriptions and morphology of words and all elements of spelling they would write words free of errors while (42.9%) confirmed that phonemic awareness is helpful to write fewer spelling. On the other hand, a few of students group (5.7%) claimed that knowing phonics and phonetic transcription is not helpful to write fewer spelling errors, they write without phonemic awareness.

**Students’ opinions about recognizing the phonemic awareness:**

-It’s good for someone studying a foreign language.

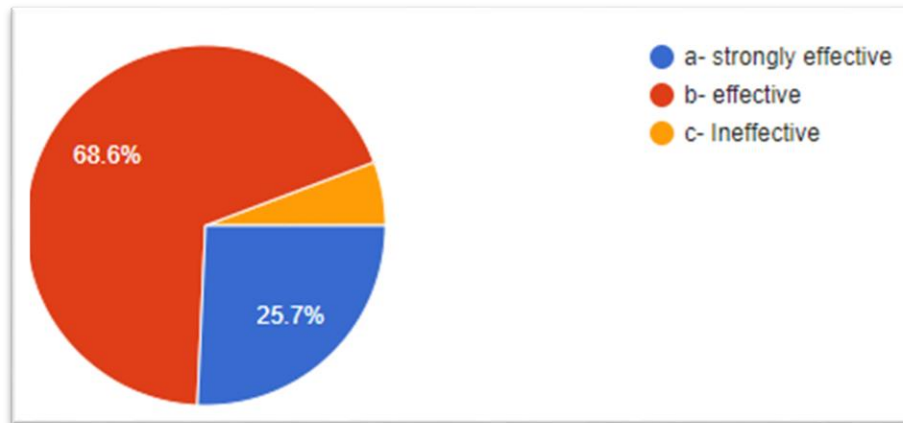
- To accustom on writing and avoid making errors.
- To improve the level and take consideration to this.
- Spelling can really improve our English language.
- It develops the pronunciation.
- Spelling is crucial cause in academia writing is the basic and the most thing which must be well examined and controlled.
- Even we do not make mistakes in spelling but we miss some phonetic rules so it matters
- To develop spelling skills.
- It will improve the learner's ability in writing so that to be avoided in their thesis.
- Because we cannot study this branch without learning how to speak the language properly.
- Me as well as many of my colleagues make spelling mistakes; however, we find it embarrassing to discuss our mistakes in public, so forming a spelling session is of a high importance to discuss our mistakes without feeling embarrassed.
- It is not necessary
- It should be as a homework.

**Item23:the position of memory strategies within the method of spelling accuracy**

<b>Options</b>	<b>Figures</b>	<b>Percentage</b>
<b>strongly effective</b>	<b>9</b>	<b>25.7%</b>
<b>Effective</b>	<b>24</b>	<b>68.6%</b>

<b>Ineffective</b>	<b>2</b>	<b>5.7%</b>
<b>Total</b>	<b>35</b>	<b>100%</b>

**Table23: the position of memory strategies within the method of spelling accuracy**



**Figure23: the position of memory strategies within the method of spelling accuracy**

According to the findings above, it is noticeable that most of students (68.6%) consider that the position of memory strategies within the method of spelling accuracy is effective while others (25.7%) claimed that it is strongly effective seeing it has high importance for spelling accuracy. The remaining students (5.7%) chose that the position of memory strategies within the method of spelling accuracy is ineffective.

**Students’ opinions about the position of memory withing the method of spelling accuracy:**

- Memorizing words correctly, spelling accuracy will be perfect and clear.
- Strong memory helps remember the different words' spelling.
- It helps to improve spelling skill and memorizing words.
- Through memory students visualize the word and write it correctly.

-Memory can play a very effective role in our spelling accuracy, but memory can fail sometimes, or rather some people do not have that strong memory to apply it.

-It depends with the kind of memory if it is short memory or long one.

-It is hard to remember the correct spelling of a specific word and it helps in active recalling as well as it drives us away from the old spelling mistakes, we used to do.

-Memory strategies are the same as learning strategies, knowing how to memorize and avoid the same mistakes.

-Without memory strategies we can't remember any spelling.

-Ineffective cause its easy.

### **3. Discussion and interpretation of results**

First of all, the questionnaire comprised different questions aiming at collecting various data to confirm or reject our hypothesis; i.e., knowing whether phonemic awareness and memory strategies are effective to identify and reduce spelling errors occurred in students' writings. Students' answers were carefully recorded in tables and interpreted in graphs. Moreover, results revealed the following:

According to the answers obtained from the students' questionnaire, we can deduce that the informants (51.4%) rated their writing level as good. This might propose that students are aware about their own writing level. Third year students may have a good comprehension of certain aspects and conventions of writing while lacking in other areas. Moreover, (54.3%) more than half are not motivated to read although reading is helpful in improving writing and other skills particularly spelling. Students who always care about their spelling (62.9%) they are sometimes commit spelling errors which means they face difficulties to write correctly in percentage of (71.4%) because of the lack of reading currently and other strategies. Thus,

these difficulties occur different types of spelling errors but the main errors that students fall in are insertion, substitution and transposition (14.3%) that leads the researchers or teachers focus on these kinds to provide students strategies in the next lines. Since spelling is not taught in the class as students (25.7%) claimed, it also leads to face obstacles in differing between the written and the spoken form of English words as well as having poor visual memory that makes them remember the written form of words which effects their academic career. Therefore, the lack of studying spelling as a result of teachers do not specify a spelling session as the answer of the majority of responds (66.6%). As well as students affirmed that teachers rarely discuss their spelling errors together which leads to the lack of spelling knowledge such as learning spelling rules. This can be interpreted by their deep need for effective strategies and techniques. However, the respondents who discuss their spelling errors in the class, they declare that the best method to follow is discussing the errors individually that shows the teacher has an effective role in learning spelling.

In addition, the main aim of the study is investigating the awareness of phonemics among students. Thus, students were asked to identify the importance of phonemic awareness where the majority of them confirmed that it is very helpful to know such new technique in learning spelling by distinguishing its elements and patterns. As well as memory has an effective role and position in spelling accuracy because knowing how to memorize leads to learn spelling more accurately and appropriately. To conclude, the previous results obtained serve in proving our supposition and confirms the fact of the ability of recognizing phonemics and using memory strategies are significant factors which help students improve their spelling level in writing and decrease some of the obstacles.

## **4. Teachers' questionnaire**

### **4.1 Aims of the questionnaire**

The teachers' questionnaire was intended to investigate the teachers' opinions about phonological and phonemic awareness as well as memory strategies as important factors to enhance spelling in writing. It also aimed at investigating the teachers' attitude and experience of how writing is being taught and the spelling errors how are being corrected. In addition to the use of some methods in dealing with problems being encountered in their teaching tasks.

### **4.2. Description of the questionnaire**

The teacher's questionnaire was designed for written expression teachers of third year in the English division at the University of Biskra. It consists of fifteen (15) items which is divided into closed questions, open-ended and multiple-choice questions. Closed questions required answers with dichotomies (yes/no questions), requiring teachers to choose "yes" or "no" answers, or to pick up the appropriate answer from a number of choices. In addition to open-ended questions where teachers were requested to provide the research about their background information including their teaching writing experience. Also, to give explanations and justifications to their answers. Likewise, multiple choice aims to select different answers for one instruction.

### **4.3. Administration of the questionnaire**

The questionnaire was distributed online to a sample of eleven (11) teachers of written expression in the division of English at the University of Biskra during the year of 2020-2021. Four of teachers' respondents were told face to face that they would receive a questionnaire to fill in whereas the remaining seven teachers were sent the questionnaire online without meeting them. The data collected from the teachers' questionnaire facilitated in providing

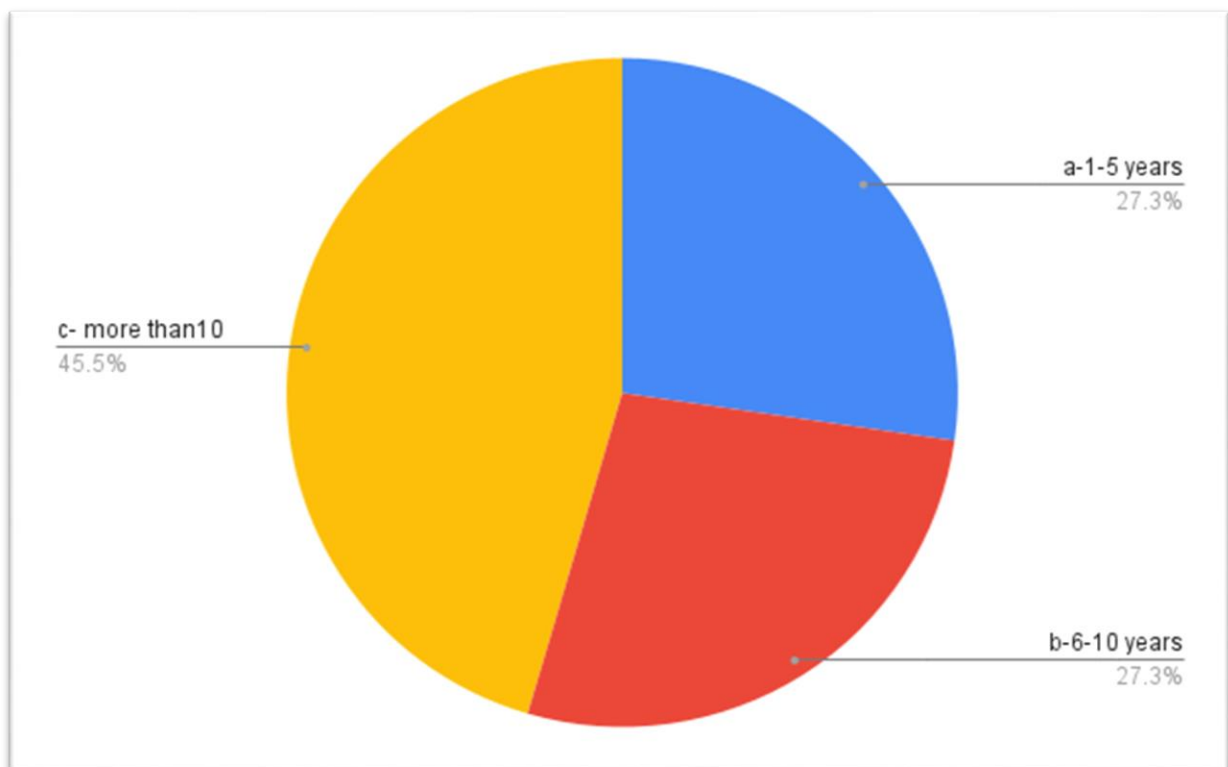
significant information and valuable ideas and knowledge which contributed to the enrichment of this study.

#### 4.4. Analysis of the questionnaire

##### Item01: Teachers' experience in teaching English

Options	Frequency	Percentage
1-5 years	3	27.3%
6-10 years	3	27.3%
more than 10 years	5	45.5%
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table24: Teachers' experience in teaching English**



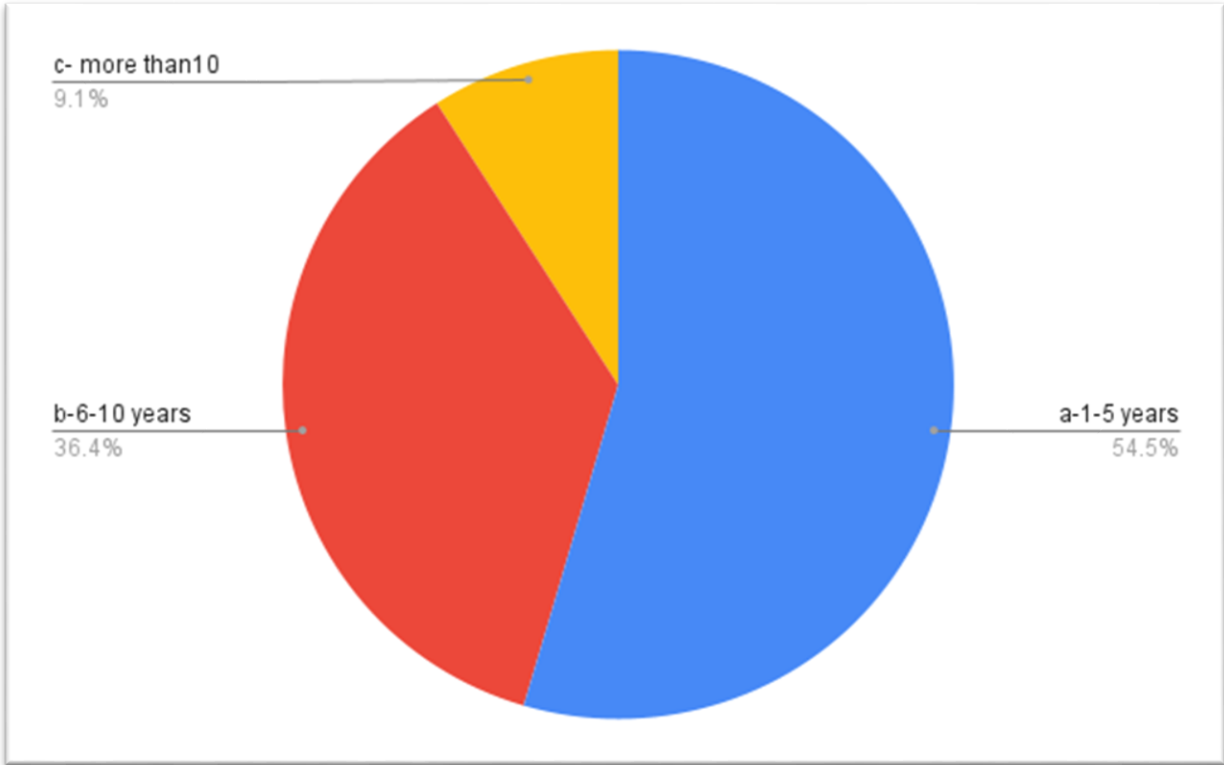
**Figure24: Teachers' experience in teaching English**

It is noticed from table 24 and figure24 that about half of the teachers (45.5%) have been teaching English more than 10years. Other teachers (27.3%) experience of 6 to 10 years as well as (27.3%) opted for 1 to 5. These results show that our sample is impartially experienced and could provide us with valuable and precise information about the topic under study.

**Item02: Teachers’ experience in teaching Written Expression module**

Options	Frequency	Percentage
1-5 years	6	54.5%
6-10 years	4	36.4%
more than 10 years	1	9.1%
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table25: Teachers’ experience in teaching Written Expression module**





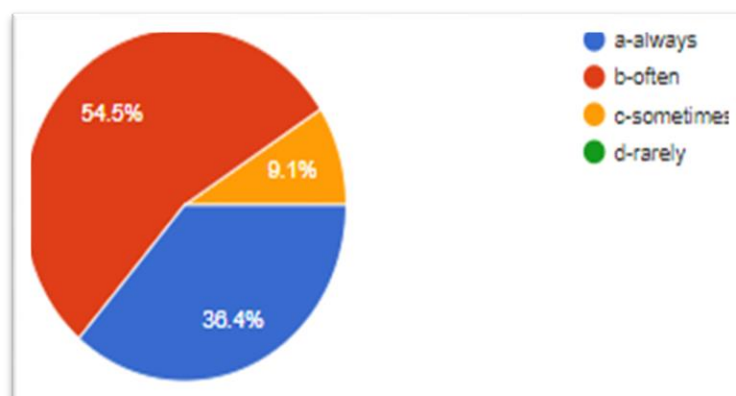
**Figure25: Teachers’ experience in teaching Written Expression**

As indicated above, six teachers have been teaching EFL writing from one to five years, while four teachers’ teaching writing experience expands over 6 years. The one remaining teacher revealed the s/he has teaching written expression for over ten years. The teachers’ varying teaching experience in written expression can provide us with different visions and opinions concerning students’ attitudes towards their writings and spelling level particularly.

**Item03: Frequency of correcting students’ spelling errors**

Options	Frequency	Percentage
<b>a-always</b>	<b>4</b>	<b>36.4%</b>
<b>b-often</b>	<b>6</b>	<b>54.5%</b>
<b>c-sometimes</b>	<b>1</b>	<b>9.1%</b>
<b>d-rarely</b>	<b>0</b>	<b>00</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table26: Frequency of correcting students’ spelling errors**



**Figure26: Frequency of correcting students’ spelling errors**

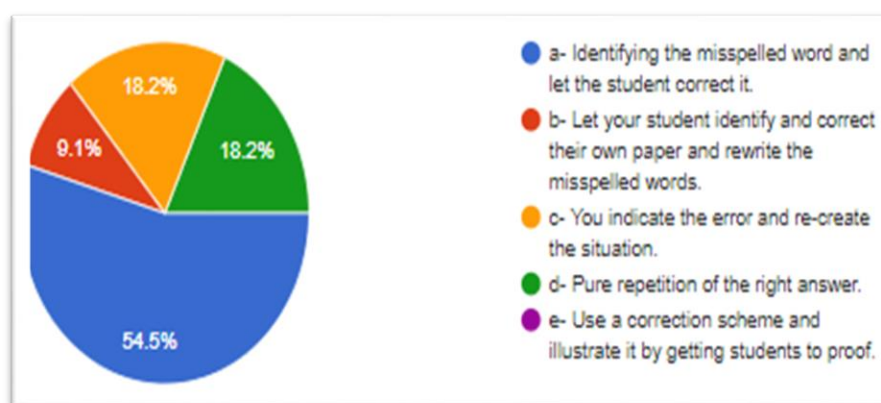
It is noticeable from the table and the chart above that all most teachers (54.5%) affirmed that they often correct their students’ spelling errors and (36.4%) always correct the errors.

This number may be a positive step that helps students to avoid committing errors. On the other hand, only one teacher (9.1%) sometimes corrects their students' errors. From these results, it is clear that many teachers try to correct spelling errors to avoid them.

**Item04:Methods followed in correcting spelling errors during the class**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Identifying the misspelled word and let the student correct it.</b>	<b>6</b>	<b>54.5%</b>
<b>Let your students identify and correct their own paper then rewrite the misspelled words.</b>	<b>1</b>	<b>9.1%</b>
<b>You indicate the error and re-create the situation.</b>	<b>2</b>	<b>18.2%</b>
<b>Pure repetition of the right answer.</b>	<b>2</b>	<b>18.2%</b>
<b>Use a correction scheme and illustrate it by getting students to proof-read faulty scripts.</b>	<b>0</b>	<b>00</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table27:Methods followed in correcting spelling errors during the class**



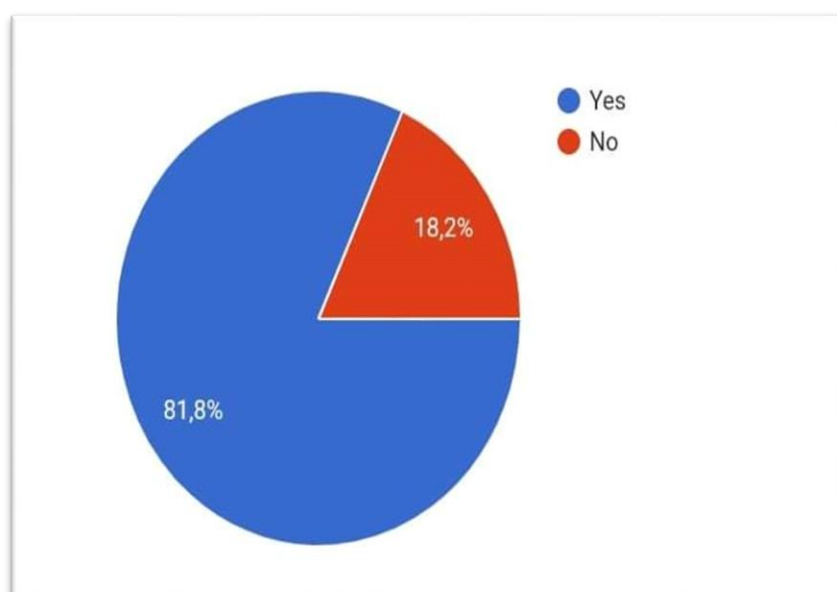
**Figure27: Methods followed in correcting spelling errors during the class**

According to the findings above, the majority of teachers (54.5%) reveal that Identifying the misspelled word and let the student correct it, used at their class as a method. Whereas as the method of indicating the error and re-create the situation as pure repetition of the right answer are used by equal number of teachers (18.2%). The minority of teachers opted for the method of letting students identify and correct their own paper then rewrite the misspelled words. However, the last option, use a correction scheme and illustrate it by getting students to proof-read faulty scripts is not used at all.

**Item05: The impact of spelling errors on students' career**

Options	Frequency	Percentage
Yes	9	81.8%
No	2	18.2%
<b>Total</b>	<b>11</b>	<b>100%</b>

**Tale28: The impact of spelling errors on students' career**



**Figure28: The impact of spelling errors on students' career**

According to the teachers' experience in teaching written expression they face spelling errors committed by students and its impact, all most teachers (81.8%) confirmed that this kind of errors effect students' career negatively whereas the other portion of teachers (18.2%) denied this by responding "No". In general, students and teacher should take into account the spelling errors issue.

As well as this question provides with teachers' clarifications about this issue, their opinions are as follows:

-Effective writers should not make mistakes.

-Misspelling is considered as a part of inaccurate writing and affects the readability of the piece of writing. It also affects the meaning of some words which creates an obstacle for better understanding of the piece of writing.

-Written and oral feedback are important in the process of learning.

-Having many spelling mistakes will undermine those students are not competent.

-The first career opportunity for an EFL graduate is teaching and spelling plays a major role in this kind of career.

-Spelling errors affect students' grades and communication. Indeed, he/she may be misunderstood and, thus, negatively evaluated and perceived by the teacher, mates or any other person.

-By correcting mistakes my students surely will recognize the right spelling-

-It makes me more attentive and aware of my students' mistakes and errors.

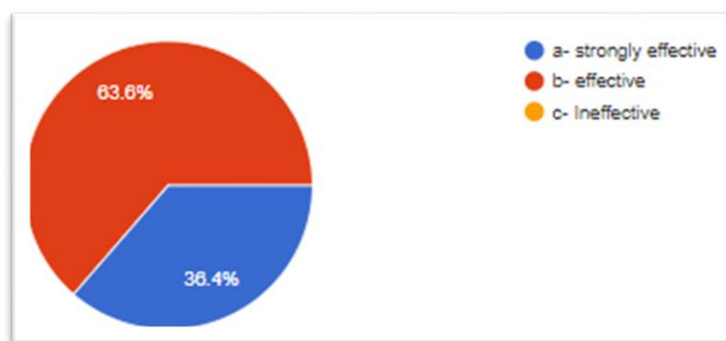
-Especially if he is going to take part in different contest and if he will be teaching.

**Item06: Teachers' assessment of memory strategies' position within the method of spelling accuracy**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Strongly effective</b>	<b>4</b>	<b>36.4%</b>
<b>Effective</b>	<b>7</b>	<b>63.6%</b>
<b>Ineffective</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**table29: Teachers' assessment of memory strategies' position within the method of spelling accuracy**

The findings above reveal that the majority of teachers (63.6%) claimed that the position of memory strategies within the method of spelling accuracy is effective while (36.4%) of teachers confirmed that it is strongly effective. Therefore, memory strategies are important and effective in teaching and learning spelling.

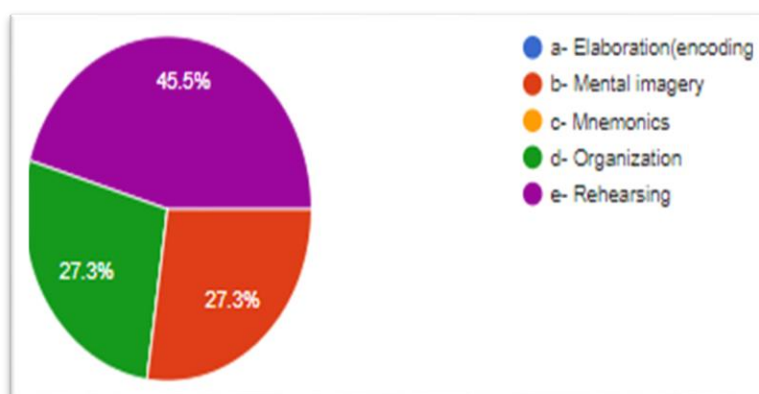


**Figure29: Teachers' assessment the position of memory strategies within the method of spelling accuracy**

**Item07: Identifying which memory strategy is more helpful to improve this skill**

Options	Frequency	Percentage
Elaboration(encoding)	00	00
Mental imagery	3	27.3%
Mnemonics	00	00
Organization	3	27.3%
Rehearsing	5	45.5%
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table30: Identifying which memory strategy is more helpful to improve this skill**



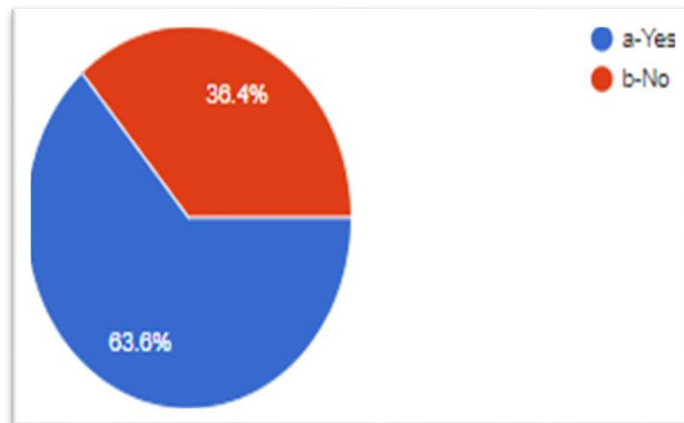
**Figure30: Identifying which memory strategy is more helpful to improve this skill**

This question examined which memory strategy is more helpful in enhancing spelling skill according to the teachers' experience. (45.5%) responded that rehearsing strategy is better in improving spelling. Whereas two equal portions (27.3%) chose the mental imagery and organization strategies are helpful to improve students' spelling skill in writing. From these findings we conclude that the rehearsing, mental imagery and organization strategies are the most helpful.

**Item08: The lack of phonemic awareness is the main reason of spelling errors**

Options	Frequency	Percentage
Yes	7	63.6
No	4	36.4
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table31: The lack of phonemic awareness is the main reason of spelling errors**



**Figure31: The lack of phonemic awareness is the main reason of spelling errors**

Through these responses it is shown that the main reason of spelling errors is the lack of phonemic awareness as clarified by the majority of teachers (63.6%). However, (36.4%) said that it is not the main reason.

**Teachers' explanations about the lack of phonemic awareness as the main reason:**

- Awareness of how words are phonemically constructed leads to effective spelling.
- English spoken form is different from the spelling form that's why many students make mistakes in addition to the lack of reading.
- Their lack of pronouncing words clearly affects their use of language.
- It is one of the major reasons as most of our students listen to English more than they read written materials
- It is basically related to the written words.

**Teachers' explanations about the lack of phonemic awareness, is not the main reason:**

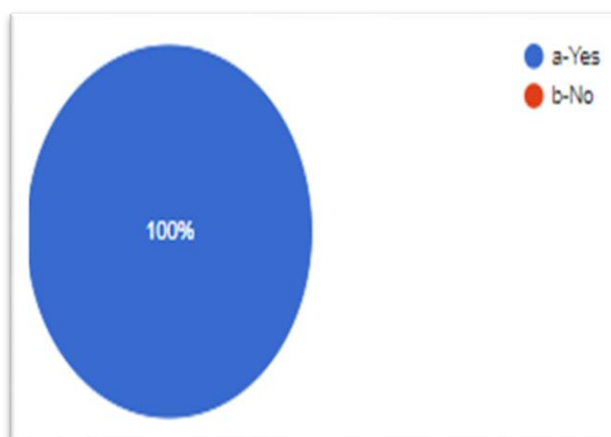
- Not surely the main reason but it is one of them. Identifying phonemes may be more advantageous in oral accuracy and fluency but not necessarily in writing. The fact is that in writing, spelling can be quite different considering silent letters, stress, accent...
- There are other reasons as the lack of practice.
- There are many reasons why students make errors or mistakes.

**Item09: Spelling and phonics should be added to the curriculum in parallel**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	<b>11</b>	<b>100%</b>
<b>No</b>	<b>00</b>	<b>00</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table32: Spelling and phonics should be added to the curriculum in parallel**





**Figure32: Spelling and phonics should be added to the curriculum in parallel**

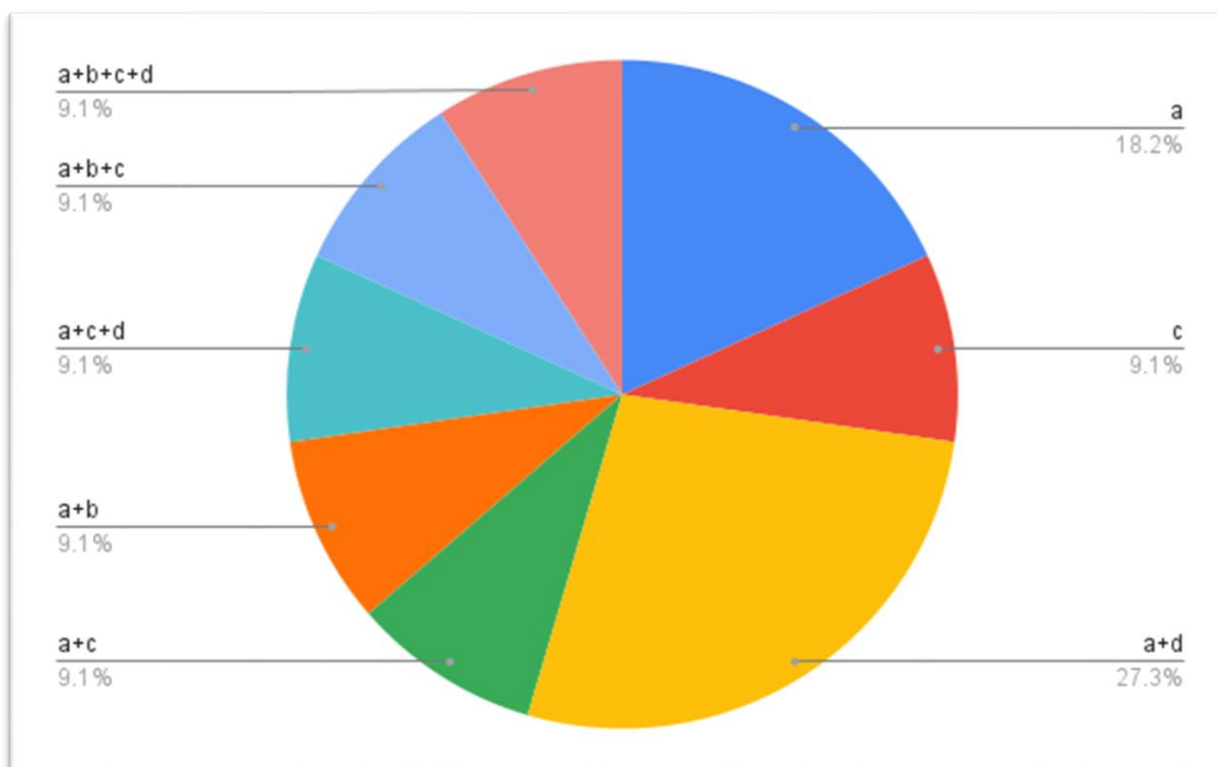
According to the findings obtained above, teachers without exception (100%) affirmed that spelling and phonics should be added to the curriculum in parallel because awareness of how words are phonemically constructed leads to effective spelling. We deduce that teachers are aware about the importance of phonemic and spelling in the writing process. According to teachers' opinions adding spelling and phonics to the program because it is fundamental aspect of writing accuracy. the more students know phonics the less, they make mistakes and it is the only solution to overcome the enormous spelling mistake in the students' written production. As well as students need more practice and rehearsal sessions in vocabulary building and pronunciation which helps them to be more accurate in writing.

**Item10: Finding the best method in learning spelling**

Options	Frequency	Percentage
<b>a-rereading the word to memorize its spelling.</b>	<b>2</b>	<b>18.2%</b>
<b>b-using pictures in remembering different words.</b>	<b>0</b>	<b>00</b>

<b>c-create a set of flashcards and writing sentences.</b>	<b>1</b>	<b>9.1%</b>
<b>d-learn a few rules.</b>	<b>0</b>	<b>00</b>
<b>a + b</b>	<b>1</b>	<b>9.1%</b>
<b>a + c</b>	<b>1</b>	<b>9.1%</b>
<b>a + d</b>	<b>3</b>	<b>27.3%</b>
<b>a + c + d</b>	<b>1</b>	<b>9.1%</b>
<b>a + b + c</b>	<b>1</b>	<b>9.1%</b>
<b>a+ b + c + d</b>	<b>1</b>	<b>9.1%</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table33: Finding the best method in learning spelling**



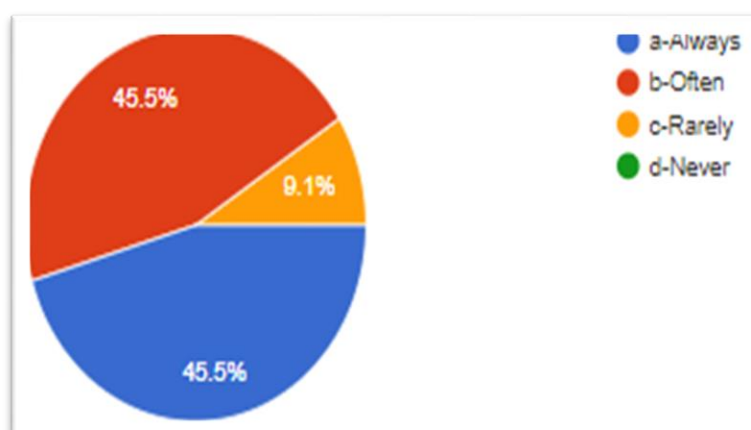
**Figure33: Finding the best method in learning spelling**

The findings of the above chart reveal that the majority of teachers (27.3%) found that the best methods in learning spelling are rereading the word to memorize its spelling and learn a few rules of spelling. while others affirmed (18.2%) that rereading the word to memorize its spelling is the only best method to learn spelling. However, using pictures in remembering different words and creating a set of flashcards and writing sentences are not supported much by many teachers (9.1%).

**Item11: Teachers' frequency in encouraging students to use developed methods to avoid spelling errors (as check spellers)**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Always</b>	<b>5</b>	<b>45.5%</b>
<b>Often</b>	<b>5</b>	<b>45.5%</b>
<b>Rarely</b>	<b>1</b>	<b>9%</b>
<b>Never</b>	<b>00</b>	<b>00</b>
<b>Total</b>		<b>100%</b>

**Table34: Teachers' frequency in encouraging students to use developed methods to avoid spelling errors (as check spellers)**



**Figure34: Teachers' frequency in encouraging students to use developed methods to avoid spelling errors (as check spellers)**

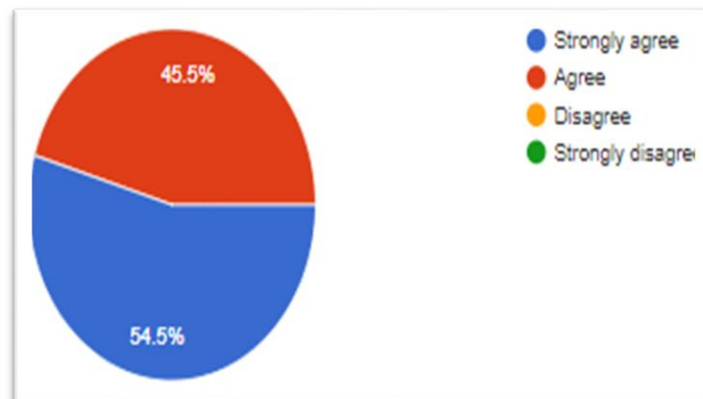
The table above reveals that the majority of teachers (45.5%) are always and often encourage their students to develop their spelling and avoid errors by using developed methods like using mobile applications and dictionaries as well as reading book. Also, informing students is important but helping them through the application of the method is more important and resort to web checkers and work autonomously to correct their errors and improve their level. One another teacher claimed that since we are learning a foreign language, we have to deal with a developed method to recognize and memorize as maximum as we can correct words to be used later. On the other hand, a minority group of teachers (9%) affirmed that they rarely encourage their students to use developed methods spelling needs to be developed individually by students themselves by using their own strategies that suit their cognitive abilities. Also, reading is a way to develop their spelling because through reading, they can meet new words and learn about their spelling.

**Item12: Teachers trying other techniques to improve students' spelling level in writing**

Options	Frequency	Percentage
Strongly agree	6	54.5%

<b>Agree</b>	<b>5</b>	<b>45.5%</b>
<b>Disagree</b>	<b>0</b>	<b>00</b>
<b>Strongly disagree</b>	<b>0</b>	<b>00</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table35: Teachers trying other techniques to improve students' spelling level in writing**



**Figure35: Teachers trying other techniques to improve students' spelling level in writing**

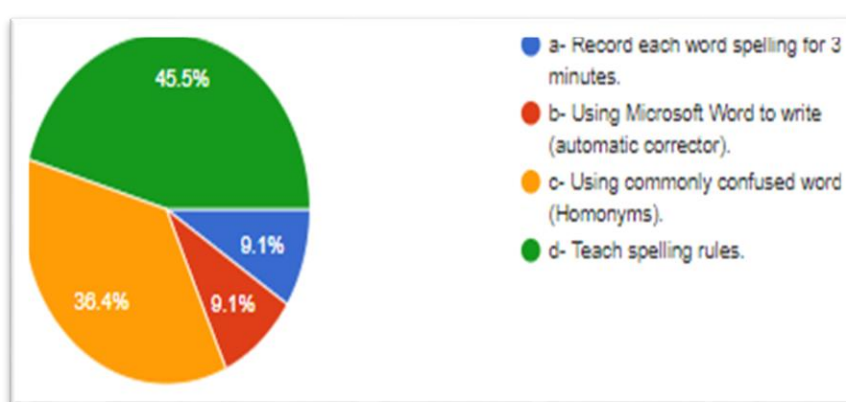
This question sought about the opinions of teachers in using other new techniques to teach spelling in other ways. Therefore, most them accept where (54.5%) responded by strongly agree means that they will absolutely try to use new techniques. The other portion (45.5%) agreed to probably trying new techniques in teaching spelling.

**Item13: Which technique is better?**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Record each word spelling for 3 minutes.</b>	<b>1</b>	<b>9.1%</b>

Using Microsoft Word to write (automatic corrector).	1	9.1%
Using commonly confused words (Homonyms).	4	36.4%
Teach spelling rules.	5	45.5%
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table36: Which technique is better?**



**Figure36: Which technique is better?**

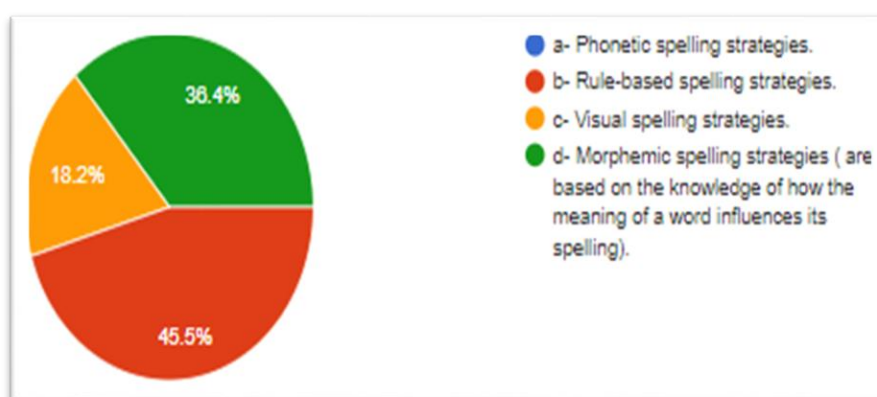
These findings mention that the preferable techniques to the teachers are Using commonly confused words (Homonyms) and teach spelling rules. Because the majority (45.5%) opted for teaching spelling rules better than others. While other teachers (36.4%) chose that using commonly confused words (Homonyms) is the effective technique to teach spelling. Nevertheless, the minority (9.1%) stated that recording each word spelling for 3 minutes and using Microsoft Word to write (automatic corrector) are better to teach.

**Item14: The workable strategy in teaching spelling**

Options	Frequency	Percentage
Phonetic spelling strategies.	0	00

<b>Rule-based spelling strategies.</b>	<b>5</b>	<b>45.5%</b>
<b>Visual spelling strategies.</b>	<b>2</b>	<b>18.2%</b>
<b>Morphemic spelling strategies</b>	<b>4</b>	<b>36.4%</b>
<b>Total</b>	<b>11</b>	<b>100%</b>

**Table37: The workable strategy in teaching spelling**



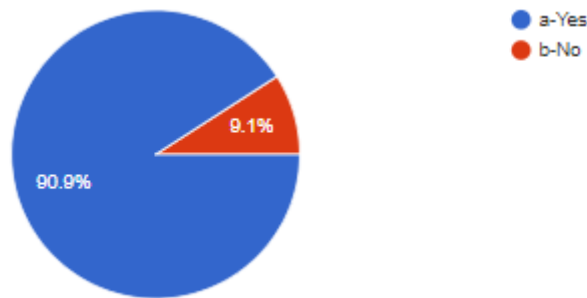
**Figure37: The workable strategy in teaching spelling**

These table and chart aimed to see the workable strategy in teaching spelling, (45.5%) confirmed that rule-based spelling strategies is workable allows students to learn the spelling rules and memorize them. While (36.4%) of teachers reflected that morphemic spelling strategies, are more practical because it is based on the knowledge of how the meaning of a word influences its spelling i.e., knowing the meaning of a word the student may identify its spelling. Though the remaining teachers (18.2%) opted visual spelling strategies for being more useful by using visual memory.

**Item15: Importance of students' recognition spelling elements (Phonology, Morphology, Orthography...)**

Options	Frequency	Percentage
Yes	10	90.9%
No	1	9.1%
Total	11	100%

**Table38: Importance of students' recognition spelling elements**



**Figure38: Importance of students' recognition spelling elements**

According to the findings above, approximately all teachers (90.9%) confirmed that students should recognize the spelling elements (Phonology, Morphology, Orthography...) because it may help them learn how words are constructed. As one teacher mentioned in the justification column, another one mentioned that it is better to learn them and avoid making errors as well. The more they know about spelling elements, the more they will be fluent and improve their level. While a minority (9.1%) of teachers responded that it is not compulsory to recognize the spelling element.

#### **4.5. Analysis of the questionnaire**

The data gathered from the teachers' questionnaire provided more in-depth information regarding the issue tackled by this study. It was noticeable that most of the teachers are experienced and have a high educational level, which makes their answers reliable and worthy. Teachers revealed that third-year students struggle in identifying the correct spelling of words for many causes. It is reported that the lack of recognizing phonemic awareness is the main



reason that students misspell the words when students mispronounce a word, they won't be able write it correctly. As well as awareness of how words are phonemically constructed leads to effective spelling since English spoken form is different from the spelling form that is why many students make mistakes in addition to the lack of reading, because reading makes them learn new vocabulary followed by its spelling using their visual memory. Therefore, teachers informed us by their responses that the position of memory strategies within the method of spelling accuracy. In addition, one reason may make students do spelling errors that is the frequency of correcting their errors by teachers as the questionnaire findings showed, teachers often correct their students' errors. These errors affect the learners' career in many ways.

Moreover, Teachers' encouragement plays a great role in motivating students to learn more about spelling using developed or non-developed methods in order to decrease their obstacles. Teachers confirmed that the best method to correct spelling errors is identifying the misspelled word to the students then let them correct by themselves. This leads students to remember their errors and the accurate spelling. Likewise, teachers mentioned that using other techniques in order to improve students' spelling level in writing like teaching commonly confused words (Homonyms) and teaching spelling rules. That leads to find the workable strategies in teaching spelling as well, are rule-based spelling strategies and morphemic spelling strategies which are based on the knowledge of how the meaning of a word influences its spelling.

These conclusions show also learning spelling elements (Phonology, Morphology, Orthography...) is important because they help students in recognizing the words nature. Similarly, all the components of language structures should be emphasized to reach mastery of the English language and teachers and students should focus more on the flaws to overcome them.

## Conclusion

This chapter was devoted to the field work and it was dealt with the practical aspect of the study. It analyzed both data gathering tools (the teachers' questionnaire and the students' questionnaire) and interpreted the results. As well as, it dealt with the description of research method, data collection tools and mainly with the analysis and interpretation of the findings. the main purpose of this study is to indicate the spelling errors and how to reduce them by using different strategies and techniques. One of the major findings revealed that students and teachers seem to have the same view and opinion concerning the importance phonemic awareness and spelling elements in teaching and learning spelling. Furthermore, we now know a great deal about the effects of spelling errors on students' writings and the necessary to learn spelling for rising their knowledge. Consequently, students and teachers' questionnaires results have been affirmed.

### **General Conclusion**

Spelling is a field of English that is problematic to master because it presents meaning more than pronunciation. This is due to the layers of sound, pattern and meaning that have resulted from the influence of many external factors investigated through this research such as words origins, similarities between French and English words, also the changes of vowels through history etc. Spelling plays a main role to develop learners writing level following by other aspect which is cognitive abilities that may help in enhancing spelling level. The main concern in our research was to investigate whether mental processes, memory strategies and phonemic awareness help students to write accurately or not.

The present study focuses on identifying spelling errors and the way of teachers in correcting them by using different methods as well as investigating the relationship between cognitive abilities and spelling errors. Wherefore, two questionnaires have been to students and teachers at the University of Mohamed Kheider Biskra. The findings uncovered that the major of students face difficulties in common which concern in spelling errors types omission, insertion, substitution, transposition. In addition, Students are in need to learn about spelling errors in particular learning phonemic aspect to distinguish between the spoken and written forms of the words. As well as, they should try relying on their mental capacities following certain memory strategies because memory position is effective within the method of spelling accuracy. Hence, teachers are required as well to guide students to use real techniques to avoid misspelling such as learning spelling rules and identifying its phonetic side. However, the main causes of spelling errors are not a result of differences between two languages writing systems but students should be more aware of phonological and morphological knowledge in order to make correct spellings. Also, the results showed that

most of teachers care about their students' spellings and they often correct their errors to help them in improving their level in spelling and writing for achieving further academic goals.

Moreover, some teachers do not give much attention to teaching spelling. The analysis of the data from the questionnaire reveals that those kinds of teachers lead students to lack motivation in learning spelling and writing accurately and appropriately. So, teachers should apply different strategies to teach them based on the types of errors they commit. As well they should add spelling and phonics in their sessions' program.

To conclude, according to all the results and findings revealed through this study, they have been answered and the research hypothesis has been confirmed.

## Recommendations and Suggestions

Based on the findings, the following recommendations can be derived for further researches:

- Teachers should be responsible to teach students to learn spelling for being motivated. They should encourage students to use the correct spelling in writing through reducing certain number of marks for every wrong spelling in their test, class work, assignment etc.
- Teachers should use developed methods to teach spelling that makes students remember the rules better.
- A spelling and phonic session should be added to the curriculum to promote spelling and writing level.
- The teacher should be skilled in managing the correction methods of the learners' errors.
- When students are given an assignment, the teacher should suggest to them using Microsoft Word to write because it contains automatic corrector that makes students remember their spelling errors.
- It is helpful to follow phonetic spelling strategies and visual spelling strategies which helps students to learn and memorize the phonemes and morphemes.
- Students should give attention to learn the spelling of words and they have to write every word with correct spelling to avoid misunderstanding.
- students should read more to enhance their vocabulary knowledge and words' forms as well as to improve their writing level and write accurately.

Evidently, both students and teachers should work together to eliminate this type of errors and enhance writing level to be granted more opportunities in the future.

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# **Appendices**



## Appendix A

### Questionnaire For Students

Dear students,

This is a master 2 student conducting a research about “the relationship between cognitive abilities and spelling errors in enhancing students writing communication”. You are graciously asked to answer the following questionnaire for third year LMD, which attempts to collect data for the accomplishment of this research using developed methods and techniques. Kindly tick (✓) the suitable answer or give a full explanation where necessary. It is appreciable if you answer this questionnaire honestly and truly to get precise and concise results.

The data gathered through this questionnaire is used for research purposes only.

Thank you for your time and contribution.

1. Age:

a- 20-30 years old                      b- over 30 years

2. Gender:

a-male                                      b-female

3. How do you consider your level in English?

a-Beginner                      b-Intermediate                      c- Advanced

4. What is your level in writing?

a-Excellent                      b- Good                      c-Average                      d-Poor

5. How many hours do you read in a week?

a-1/2hours                      b-3/4 hours                      c-5/6hours                      d-10 hours/more

6. While facing new words in reading, do you rewrite them to improve your level in writing?

a-Yes      b-Absolutely yes      c- No

7. How often do you care about your spelling?

a-always                      b-sometimes                      c-rarely

8. How often do you commit spelling errors?

a-always                      b-sometimes                      c-rarely

9. How often do you read your literary texts before submitting it?

a-always                      b-often                      c-sometimes                      d-rarely

10. Do you have any spelling difficulties?

a-Yes                      b-No

**-Rate it:**

a-25%      b-50%      c-75%      d-100%

11. What kind of difficulties (you can choose more than one)?

- a- Insertion (adding one letter or more)
- b- Substitution (replacing one or more letters with incorrect ones)
- c- Omission (deleting one or more letters)
- d- Transposition (reversing the position of letters)

12. What is the main reason of your spelling errors?

- a- spelling is not actually taught as an aspect of English language.

- b- you don't take the pain to go through your works after writing.
- c- there are few books that emphasize spelling rules in the school library.
- d- some teachers lack in teaching spelling.
- e- many teachers sometimes seem to commit spelling errors while writing on the board.

**13.** What is the most obstacle you face while writing a word?

- a- the difference between the written and spoken English.
- b- the origin of English words.
- c- carelessness.
- d- poor visual memory.

**14.** What do you do if you do not know how to spell a word?

- a- write it as you feel it is.
- b- ask your friends.
- c- ask your teacher.
- d- check it up in the dictionary.

**15.** When you commit spelling errors:

- a- you get less marks.
- b- you spend more than necessary time while writing essays.
- c- you write untidy essays.

**16.** Which method do you use in learning spelling? (You can tick multiple choices)

- a- rereading the word to memorize its spelling.
- b- using pictures in remembering different words.

- c- create a set of flashcards and writing sentences.
- d- learn a few rules.
- e- others;

17. When seeing a new word:

- a- you immediately memorize it.
- b- you reread it again (twice or more).
- c- rehearsing the word.

18. Does the teacher specialize a spelling session?

- a-Always
- b-Often
- c-Rarely
- d-Never

19. Does the teacher discuss your spelling errors with you?

- a-Always
- b-Often
- c-Rarely
- d-Never

**-How?**

- a- individually
- b- in front of all the class
- c- collect all your classmates' errors
- d- others

-Which one is preferable to you?

- a- 1<sup>st</sup>
- b- 2<sup>nd</sup>
- c- 3<sup>rd</sup>

20. Do you take into consideration the teacher's remarks?

- a- Yes
- b- Sometimes
- c- No

-Why?

.....

21. Is it important to add a spelling session to the program?

- a-yes
- b- no

-Justify:

.....

22. If you recognize phonemic awareness (It is the ability to identify and manipulate individual sounds (phonemes) in spoken words), do you find it:

- a- Very helpful to write fewer spelling errors.
- b- Helpful to write fewer spelling errors.
- c- Not helpful to write fewer spelling errors.

23. How do you assess the position of memory strategies within the method of spelling accuracy?

- a- strongly effective
- b- effective
- c- Ineffective

-Explain.....

Thank you for your participation.

## Appendix B

### Questionnaire For the Teachers

Dear teacher of written expression,

This is a master 2 student conducting a research about “the relationship between cognitive abilities and spelling errors in enhancing students writing communication”. You are graciously invited to answer the following questionnaire for written expression teachers who teach third year LMD, which attempts to collect data for the accomplishment of this research using developed methods and techniques. Kindly tick (✓) the suitable answer or give a full explanation where necessary. It is appreciable if you answer this questionnaire honestly and truly to get precise and concise results.

Your answers and opinions will be a great help to accomplish this research project.

The data gathered through this questionnaire is used for research purposes only.

Thank you for your time and collaboration.

1. How long have you been teaching English?

.....

2. How long have you been teaching Written Expression module?

.....

3. How often do you correct your students' spelling errors?

a-always

b-often

c-sometimes

d-rarely

4. Which method do you follow in correcting spelling errors during the class?
- a- Identifying the misspelled word and let the student correct it.
  - b- Let your students identify and correct their own paper then rewrite the misspelled words.
  - c- You indicate the error and re-create the situation.
  - d- Pure repetition of the right answer.
  - e- Use a correction scheme and illustrate it by getting students to proof-read faulty scripts.

5. Does this kind of errors effect students' career?

a-Yes

b-No

-Would you please explain how?

.....

6. How do you assess the position of memory strategies within the method of spelling accuracy?

- a- strongly effective
- b- effective
- c- Ineffective

7. According to your experience, which memory strategy is more helpful to improve this skill?

- a- Elaboration(encoding)
- b- Mental imagery
- c- Mnemonics
- d- Organization
- e- Rehearsing





**12.** In order to improve students' spelling level in writing, would teachers try other techniques?

- a- Strongly agree
- b- agree
- c- strongly disagree
- d- disagree

**13.** Which technique is better?

- a- Record each word spelling for 3 minutes.
- b- Using Microsoft Word to write (automatic corrector).
- c- Using commonly confused words (Homonyms).
- d- Teach spelling rules.

**14.** Which strategy is workable in teaching spelling?

- a- Phonetic spelling strategies.
- b- Rule-based spelling strategies.
- c- Visual spelling strategies.
- d- Morphemic spelling strategies (are based on the knowledge of how the meaning of a word influences its spelling).

**15.** Should students recognize spelling elements (Phonology, Morphology, Orthography...)?

- a-Yes
- b-No

Please justify why? .....

We thank you for your collaboration in filling this questionnaire

## Résumé

L'orthographe est un aspect important d'une langue et un facteur efficace pour écrire de manière appropriée et transmettre un message précis à un lecteur. Les capacités qui aident à améliorer et à développer les compétences en orthographe, ce sont des capacités cognitives qui concernent les énergies humaines entières. Cette étude actuelle tente d'enquêter sur les problèmes d'orthographe et les erreurs commises par les étudiants LMD de troisième année qui étudient l'anglais langue seconde et se préparent à passer en Master, et également les causes de ces erreurs d'orthographe, ainsi que déterminer la relation entre l'amélioration des compétences en orthographe et l'utilisation des capacités cognitives et les stratégies de mémoire. Pour cet objectif, une recherche analytique descriptive avec une approche qualitative a été appliquée. Pour collecter les données, nous avons formulé des questionnaires pour les étudiants et les enseignants. L'échantillon était composé de 35 étudiants de troisième année LMD et de 11 enseignants de l'Université Mohamed Kheider de Biskra. Les principaux résultats montrent que les étudiants font face à de fréquentes difficultés et obstacles dans la rédaction académique, principalement au niveau de l'orthographe. Le questionnaire des enseignants montre des résultats similaires en termes de domaines de défis citant de nouvelles méthodes et techniques pour éviter les erreurs. Les résultats révèlent également que les enseignants attribuent les difficultés principalement au manque de conscience phonémique et au manque de règles de lecture et d'apprentissage. De plus, la majorité des participants croient que l'utilisation de stratégies de mémoire est efficace pour apprendre l'orthographe. Les recommandations venues des résultats doivent être prises en compte par les étudiants, les enseignants et les concepteurs de programmes.

**Mots clés :** fautes d'orthographe, capacités cognitives, conscience phonémique, mémoire, étudiants EFL.