



Mohamed Khider University of Biskra
Faculty of Letters and Languages
Department of English Language

MASTER THESIS

Title

The Contribution of Mnemonics in Enhancing Students' Phonemic Awareness

The case of EFL First Year LDM Students at Mohamed Khider University of Biskra

Dissertation Submitted in Partial Fulfillment of the Requirements
for a Master's Degree of Master in Sciences of the Language

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Declaration

I Hania LALLALI, do hereby declare that this submitted work is my original work and has not previously been submitted for any institution or university for a degree. I also declare that a list of references is provided forward indicating all the sources of the cited and quoted information. This work was certified and completed at Mohammed KHEIDER University of Biskra.

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A handwritten signature in black ink, consisting of a series of loops and a horizontal line extending to the right.

Dedications

This dissertation is dedicated to my own journey of learning and growth. It is a testament to the transformative power of perseverance and the pursuit of knowledge.

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Abstract

The present study investigates the contribution of mnemonic instruction to developing phonemic awareness. It examines the possibility of enhancing students' phonemic awareness through the application of mnemonic strategies, such as keyword methods, statements, rhymes and acronyms. The study focuses on First Year LMD students at Mohamed Kheider University. The motivation for this study stems from the complexity of developing phonemic awareness skills in the educational field. Effective training in this area is crucial as students encounter new vocabulary and concepts. This research suggests that many students at Mohamed Kheider University may struggle with phonemic awareness. Difficulties could arise due to unfamiliar sounds, a lack of prior exposure to specific phonemes, or the complexity of sound-symbol relationships. To collect the data the researcher employed a mixed-method approach utilizing two instruments: a quasi-experiment with one group of 30 students and questionnaire .. Data analysis determined if mnemonics can assist students in overcoming challenges related to phonemic awareness. This investigation aims to accept the alternative hypothesis and reject the null hypothesis.

Keywords: Phonemic awareness, Mnemonics, memory, Mnemonic instruction/strategies

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List of Abbreviation and Acronyms

EFL: English as a foreign language.

EG: Experimental group

ELL: English language learner.

LTM: Long term memory.

STM: Short term memory.

WM: Working memory

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General Introduction

General Introduction

Introduction

The English language, with its vast vocabulary and grammar rules, allows people to communicate and learn new things. For those beginning to learn English, the initial steps can be challenging. However, a key skill called phonemic awareness is essential for mastering English. Phonemic awareness simply means understanding the individual sounds, or phonemes, that make up spoken words. It's like learning the building blocks that words are built from. Just as a strong foundation is crucial for a sturdy building, phonemic awareness is the basis for developing strong reading and spelling skills in English. In the next section, we will discuss mnemonics, which are memory aids that can make learning phonemic awareness fun and engaging for English language learners.

1. Study Background

Phonemic awareness, the ability to hear and manipulate individual sounds in words, is the cornerstone of strong reading skills. This skill is particularly critical for English as a Foreign Language (EFL) learners who heavily rely on reading to acquire knowledge due to limited exposure to spoken English outside the classroom. However, research suggests that many EFL students struggle with phonemic awareness development, hindering their reading fluency and ultimately, comprehension. Several factors contribute to these challenges, including limited exposure to the target language sounds, unfamiliar sound systems in English compared to their native language, and a lack of prior knowledge about sound-symbol relationships. Traditional reading instruction might not explicitly address these foundational building blocks. This study investigates the potential of mnemonics, memory aids that utilize techniques like visuals, keywords, or acronyms, to bridge this gap and enhance phonemic awareness in EFL learners. By

making the learning process more engaging and information easier to retain, mnemonics could offer a valuable tool to improve phonemic awareness development, ultimately leading to stronger literacy skills in EFL learners.

2. Statement of the problem

Despite the well-established importance of phonemic awareness in mastering English, current methods for teaching this skill to English language learners (ELLs) often fall short. Traditional approaches, which frequently rely on drills and rote memorization, can prove ineffective for this specific student population. These methods often fail to consider the distinct challenges faced by ELLs. Unlike native speakers who acquire phonemic awareness naturally through exposure to their first language, ELLs must grapple with unfamiliar sounds, spelling patterns that defy logic, and the potential influence of their native phonological systems. Furthermore, traditional methods can struggle to capture and maintain student engagement. Repetitive drills can quickly become monotonous, leading to boredom and disinterest, ultimately hindering the learning process. Additionally, rote memorization often results in short-lived gains that fade quickly, failing to facilitate long-term knowledge retention.

This lack of effective pedagogical tools for enhancing phonemic awareness in ELLs has significant downstream impacts. Weak phonemic awareness skills can severely hinder the development of strong reading and spelling abilities. These foundational skills are crucial for overall success in acquiring English fluency. This research proposal seeks to address this critical gap by investigating the potential of mnemonics as a more engaging and effective approach to improve phonemic awareness in ELLs. We hypothesize that well-designed mnemonics, incorporating visual, auditory, and potentially kinesthetic elements, can bridge the gap between

ELLs' native phonology and the sounds of English, fostering a deeper understanding of the language's building blocks.

By capitalizing on the novelty and creativity of mnemonics, we believe this approach can increase learner engagement and motivation, leading to a more enjoyable and effective learning experience. Furthermore, mnemonics have the potential to enhance long-term memory by providing a strong mental framework for storing and retrieving information about phonemic awareness. By exploring the effectiveness of mnemonics, this research aims to contribute to the development of more engaging and effective teaching practices, ultimately promoting stronger phonemic awareness and overall English language acquisition in ELLs.

3. Related Review of the Literature

Phonemic awareness, the ability to manipulate and identify individual sounds in spoken language, is a cornerstone for successful reading and spelling acquisition. This skill is particularly crucial for English language learners (ELLs), who face the additional challenge of navigating unfamiliar sounds and inconsistent spelling patterns in English compared to their native languages. Traditional methods for teaching phonemic awareness, often reliant on repetitive drills and rote memorization, can be ineffective for ELLs. These methods may fail to capture student engagement and cater to the specific needs of their native phonological systems.

There is a growing body of research exploring the potential of mnemonics as a more engaging and effective approach to enhance phonemic awareness in ELLs. Mnemonics are memory aids that utilize visual, auditory, or kinesthetic elements to improve learning outcomes across various educational settings. Several studies have yielded promising results regarding the

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use of mnemonics for phonemic awareness in ELLs. Agramonte and J Belfiore, (2012) mentioned that the purpose of this study was to examine the effects of an integrated mnemonics strategy on consonant letter naming and consonant sound production on three kindergarten students at-risk for academic failure. Flashcards were developed where the target capital letter was enhanced and imbedded as part of the known picture (e.g., the letter D as the doorknob on a door, the letter F as the flag and flagpole). The mnemonic strategy was assessed using a multiple baseline across students' design. Results showed that all three students increased in both the number of consonants named and the number of consonant sounds produced. In addition, all three students maintained performance at the 1 and 3 week follow-up. Also, based on a pre- and post-assessment, two students demonstrated generalization to the ability to name words beginning with consonants letter-sound learned.

Another study of C Ehri ,(2022) sbout said that, What teachers need to know and do to teach letter-sounds, phonemic awareness, word reading, and phonics, A hallmark of skilled reading is recognizing written words automatically from memory by sight. How beginning readers attain this skill is explained. They must acquire foundational knowledge, including phonemic segmentation, grapheme-phoneme knowledge, decoding, and spelling skills. When these skills are applied, spellings of words become bonded to pronunciations and meanings and stored in memory. Suggestions for teaching these skills are offered. These include picture mnemonics to teach letters, articulation to teach phonemic segmentation, and sound streaming to teach decoding. It is important to teach decoding with grapheme-phoneme subunits rather than syllabic units. It is important to read words in text to bond meanings to spellings in memory. It is important for beginners to read words in text aloud rather than silently. Showing students

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spellings of new vocabulary words when they are taught improves their memory for the words. Students' progress through four alphabetic phases in acquiring these skills. Systematic phonics instruction facilitates movement through the phases.

Also, C Ehri, D Deffner and S Wilce, (1984) said that Evaluated whether picture mnemonics help prereaders learn letter–sound associations in 2 experiments with 20 1st graders (Exp I), 30 preschoolers, and kindergartners (Exp II). Pictures integrating the associations were compared with disassociated pictures and with a no-picture control condition. Ss in the integrated-picture group learned 5 letter-sound associations (eg, f,/f/), each represented by a picture whose shape included the letter (eg, letter f drawn as the stem of a flower) and whose name (flower) began with the letter's sound. Ss in the disassociated-picture group learned letter–sound associations with pictures having the same names as the integrated pictures, but drawn differently—without letter shapes. Ss in the control group learned associations with picture names but no pictures. Prior to letter–sound training, all groups were taught how to segment the initial sounds of the picture names. Results reveal that Ss taught with integrated mnemonics learned more letter–sound associations and also more letter–picture associations than did the other 2 groups, which did not differ. Integrated pictures were effective because they linked 2 otherwise unconnected items in memory. It is concluded that the shape of letters included in pictures reminded learners of previously seen pictures with those shapes whose names began with the relevant letter sounds.

In another study, C Hill (2022), mentioned that the overall purpose of his study is to explore and understand how students acquire and apply new information (in particular, vocabulary) and how we as instructors can aid in this process. Communicative Language

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Teaching (CLT) as a whole tends to prioritize implicit learning but it is my belief that certain content can be understood more profoundly when presented in an explicit manner. This research seeks to determine the role of various mnemonic devices in the learning process and how effective they are for helping university students retain information in the English as a Foreign Language (EFL) classroom. Results collected from this experiment conclude that mnemonic devices can indeed improve a student's vocabulary retention and that Chinese EFL students prefer mnemonic techniques which bridge the linguistic gap between their native language and target language. In application, EFL instructors can utilize the findings of this research to raise a student's awareness of language

Furthermore, Rosenthal and C Ehri (2008), Two experiments, the authors examined whether spellings improve students' memory for pronunciations and meanings of new vocabulary words. Lower socioeconomic status minority 2nd graders (M= 7 years 7 months; n= 20) and 5th graders (M= 10 years 11 months; n= 32) were taught 2 sets of unfamiliar nouns and their meanings over several learning trials. The words were defined, depicted, and embedded in sentences. During study periods, students were shown written forms of 1 set but not the other set. Spellings were not present during word recall. Results of analyses of variance showed that spellings enhanced memory for pronunciations and meanings compared to no spellings ($p < .01$). Better readers and spellers increasingly outdistanced poorer readers and spellers in remembering pronunciations over trials when spellings accompanied learning ($p < .05$), suggesting a Matthew effect. An explanation is that spellings activated graphophonemic connections to better secure pronunciations and meanings in memory. Results indicate that orthographic knowledge benefited vocabulary learning and diminished dependence on phonological memory. Instructional implications are that teachers should include written words as part of vocabulary instruction and

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that students should pronounce spellings as well as determine meanings when they encounter new vocabulary words.

4. Research Questions

This research seeks to answer the following questions:

RQ1: Can mnemonic techniques improve students' ability to recognize and remember the sounds of words?

RQ2: What types of mnemonic strategies, like rhymes or visual aids, are most effective in boosting students' phonemic awareness?

RQ3: How does teacher training in using mnemonics impact their successful application for enhancing students' phonemic awareness?

1. Research Hypothesis

The research aims to test the following hypothesis:

H0: The use of mnemonics will not significantly improve the **phonemic awareness** of first-year LMD students of English at the University of Mohamed Kheidher Biskra compared to traditional teaching methods.

H1: The use of mnemonics will significantly improve the **phonemic awareness** of first-year LMD students of English at the University of Mohamed Kheidher Biskra compared to traditional teaching methods.

These hypotheses will be tested through the implementation and data analysis techniques. The findings will shed light on the potential of mnemonics as a practical teaching tool for enhancing phonemic awareness and overall language learning success among first-year LMD students in the specific context of this research.

2. Aims of the Study

This research aims to investigate the contribution of mnemonics to enhancing the phonemic awareness of first-year LMD students of English at the University Mohamed Kheidher Biskra. Specifically, it will focus on:

- Evaluating the effectiveness of different types of mnemonics (e.g., rhymes, visual aids, acronyms) in improving students' ability to recognize, differentiate, and manipulate the sounds within English words.
- Examining the impact of using mnemonics on students' engagement and motivation in learning English pronunciation.
- Exploring any potential effects of prior language learning experiences on the effectiveness of mnemonics for different student groups.
- Developing practical recommendations for incorporating mnemonics into the English language teaching curriculum at the university level, specifically tailored to the needs of first-year LMD students.

By achieving these aims, this research aims to contribute valuable insights into the potential of mnemonics as a pedagogical tool for improving pronunciation and enhancing overall language learning outcomes in the context of first-year English language learners at the university level.

3. Research Methodology

This research employed a quasi-experimental design with one groups: an experimental group (EG). The EG will receive instruction on English pronunciation using mnemonics (memory aids like rhymes, , or acronyms) in addition to the regular curriculum. Data collected through

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pre-tests (to establish a baseline) and post-tests (to measure improvement) of English phonemic awareness (ability to identify and manipulate sounds). An optional survey also used to gather information on student engagement and motivation regarding pronunciation learning. Statistical analysis compared pre-test and post-test scores to assess the effectiveness of mnemonics (hypothesis 1).

Ethical considerations include informed consent from participants and guardians, anonymity, and data confidentiality. The research acknowledges limitations inherent to quasi-experimental designs, such as factors beyond the intervention (e.g., individual learning styles). While this methodology aims to provide a robust approach to investigate the impact of mnemonics, interpreting the findings will require careful consideration of these limitations.

4. Population and Sample

- **Target population:** This research focused on first-year LMD students enrolled in the English language program at the University Mohamed Kheidher Biskra.
- **Target sample:** One intact classe meeting the inclusion criteria (first year, LMD students) will be randomly chosen from the English language program. The classe assigned to the EG. This method ensures pre-existing group differences are eliminated, as the classe experience similar baseline conditions.

5. Structure of the Thesis

The thesis took the conventional structure. First is a general introduction, containing the background of the study, problem statement, the proposed research questions and hypotheses, brief review of the literature, the adopted methodology, and the aims of the study. Second is the first chapter that focus on Mnemonics and elaborating on memory and its types, Mnemonics, history of Mnemonics, their definition, types, their importance in the learning, and some

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limitations to be considered. Additionally, Mnemonics in relation to phonemic awareness, including types and their effectiveness. Third is the second chapter that focus on phonemic awareness, containing definition of phonemic awareness and phonological awareness, types, difference between the two phonemic and phonological awareness, levels of phonological awareness, Mnemonics and phonemic awareness, and how Mnemonics can enhance the phonemic awareness.

Fourth is the third chapter that focus on the field work and data analysis, describing the adopted methodology, displaying the collected data from the students' questionnaire and the experiment, analyzing and interpreting the results, and discussing the results in relation to the research hypotheses and questions. Finally, the general conclusion containing the summary of the study as a whole and the display of the key findings, limitations, and recommendations and pedagogical implications.

Chapter One.

Mnemonics

1. Chapter One: Mnemonics

Introduction

Mnemonics (pronounced ni-'mo-niks) are essentially memory aids. They take advantage of our brain's natural ability to connect with easier-to-remember things, like rhymes, acronyms, or repetition. By associating new information with these familiar cues, mnemonics help us encode and retrieve information more effectively. Imagine trying to memorize the order of the planets. A standard list might be difficult to recall. But what if you learned the silly sentence, "My Very Eager Mother Just Served Us Nine Pizzas"? Suddenly, remembering the order of Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto becomes a fun and memorable task!

Mnemonics come in various forms, including:

Acronyms: These are words formed from the first letters of a phrase, like HOMES for the Great Lakes (Huron, Ontario, Michigan, Erie, Superior).

Rhymes: Catchy rhymes can help you remember things in order, like "Thirty days hath September...". **Acrostics:** Similar to acronyms, acrostics use the first letter of each word in a phrase to create a new word or sentence that serves as a memory cue. **Method of Loci:** This technique involves associating information with familiar locations, like placing grocery items on a mental map of your house. Mnemonics aren't just for students, People of all ages can benefit from these memory-boosting techniques. From remembering phone numbers to mastering new vocabulary, mnemonics can be a powerful tool for anyone looking to improve their memory and learning abilities.

1.1 Working Memory

Researchers in cognitive psychology consider working memory to be a crucial concept. It's like a temporary storage space that allows you to hold information in your mind while

you're thinking about other things (Savage, 2006). It's a complex system that plays a central role in how we use our minds (Jachie, 2001). Some even view it as an umbrella term encompassing various short-term and long-term memory functions (Baddeley, 1986, cited in Milton, 2008).

1.1.1 Types of Memory

There are two main types of memory: short-term memory and long-term memory. Let's explore each in more detail.

1.1.1.1 Short-Term Memory (STM). Short-term memory holds information for just a few seconds to minutes, with the exact length of time varying according to research (Hauptmann, 2004). Miller (1956, cited in Hauptmann, 2004) proposed that STM can only process a limited amount of information, around 7 plus or minus 2 individual items. However, he also suggested a way to increase this capacity called chunking, which involves grouping information together (Polluck, 1952). The term short-term memory has been somewhat replaced by working memory (WM). Baddeley and Hitch's (1974, cited in Hauptmann, 2004) theory proposes that working memory has several components: a central executive, a phonological loop, and (later added) a primary acoustic store. The central executive coordinates information flow, processing, and storage. It's a short-term processor with the added ability to handle higher cognitive functions like problem-solving, reasoning, and metacognition (Slame & Baddeley, 1982, cited in Hauptmann, 2004 & Milton, 2008).

1.1.1.2. Long-Term Memory (LTM). For language learners, it's crucial to transfer information from short-term memory to long-term memory (LTM) for lasting knowledge. Cognitive scientists are interested in how this encoding process works, how LTM operates, and how information is retrieved from this vast storehouse. Hauptmann (2004) suggests that the key to transferring information from WM to LTM is finding existing knowledge in LTM

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to connect the new information to. For vocabulary learning, this means finding connections between new words and existing elements in the mental lexicon (Schmitt, 2000).

1.1.2 Retrieval

Retrieving information from a text can be challenging, but it's considered a crucial reading skill that needs regular practice and development (Dean, 2019). Strong retrieval skills rely on strong memory resources and strategies for confident and effective comprehension. This can be practiced daily through oral questioning in lessons or written activities.

1.1.3 Spacing

Understanding vocabulary or terms in isolation, without connecting them to the text as a whole, hinders memory and comprehension (Milton, 2008). Students who don't connect terms to the broader context may only understand the individual words instead of the entire passage.

1.1.4 Forgetting

The study of memory also involves understanding forgetting. Hauptmann (2004) suggests that information is forgotten in the sensory register due to spontaneous decay, while in short-term memory, it's often displaced by new incoming information. In long-term memory, forgetting likely occurs because information falls into disuse due to a lack of repetition (Milton, 2008). Forgetting can also be caused by interference from previously learned information (proactive interference) or information learned later (retroactive interference) (Spear, 1978, cited in Hauptmann, 2004).

1.2 Mnemonics or the Art of Memory

The term "mnemonics" has different meanings depending on the scholar.

1.2.1 Terminology of the Word Mnemonics

Mnemonics comes from the Greek word "μνημονικός" (mnémonikos), which translates to "of memory" or "relating to memory." It also stems from "mnemon," meaning "remembering" or "mindful," and "mnsthai," meaning "to remember," which itself comes from "men," meaning "to think". Mnemonics (pronounced "mee-moh-nicks") can also be referred to as strategies, techniques, methods, or devices. They are systematic procedures designed to enhance memory. On the other hand, the broader term for mnemonics, "memoriotechnica," refers to devices that aid memory retrieval, allowing the mind to recall unfamiliar ideas, particularly by connecting unrelated concepts (Jurowski & Krzeczowski, 2015).

1.2.2 Brief History of Mnemonics

Mnemonics boast a rich history, making it difficult to pinpoint their exact origin. They likely emerged in prehistoric times, potentially aiding in storytelling and record-keeping.

Scholars attribute the development of mnemonics to various figures:

- **Simonides (477 BC):** A Greek poet credited with creating the first system of memory aids for objects and words, including rote memorization techniques.
- **Romans:** Memory techniques spread from the Greeks to the Romans, where memory aids were used in rhetoric and the "herennium" (the oldest surviving Latin book on rhetoric, dating from 90 BC). This book focused on how Romans viewed memory aids and discussed the "loci" method, where individuals create a mental image of a familiar location and place items they want to remember within it.
- **13th Century:** Following the Roman Empire's fall, Thomas Aquinas valued the soul, and memory aids started appearing in classrooms for younger students, primarily focused on learning grammar and complex ideas, not basic letters.

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- **16th Century:** Ignatius of Loyola emphasized using all five senses to improve memory retention. During this time, the "peg system" was introduced, where a series of images serve as anchors for memorizing information.
- **Late 19th Century:** Mnemonics regained interest as a field of psychology.

Milton (2008) highlights that mnemonics have been used in schools for over 250 years, dating back to the Ancient Greeks. While research on mnemonics in language learning and teaching has increased in the past two decades, there's still no definitive consensus on the extent to which teaching mnemonics improves students' reading comprehension (Fasih, 2017).

- **Mnemonics Today**

In modern times, mnemonics are described as "the art of refreshing, improving or developing memory." Especially by artificial aids which are a system of precepts and rules intended to aid or improve memory (Hauptmann, 2004). While Bellezza (1987 as cited in Hauptmann, 2004) stated that mnemonic is strategy for organizing and \ or encoding information through the creation and use of cognitive cueing structures. These definitions exemplified the fact that mnemonics are no longer as considered in the prehistoric times, but as instructions which are used in class by teachers or students to promote and develop the students' ability to memorize and understand the content.

1.2.3 Mnemonics' Definition

Mnemonics are memory strategies that assist learners in retaining information (Bruning, 1985 as cited in Sirgear, 2016). They make learning easier by facilitating elaboration, chunking, and information retrieval. Mnemonic devices act as memory-focused tactics, helping students transform or organize information. Mnemonics can also be described as a memory-enhancing instructional strategy. It involves teaching students to connect new

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information to their existing knowledge. Researchers have explored ways to encourage students to link new vocabulary words to previously learned concepts (Bruning, 1995 as cited in Sirgear, 2016). Put simply, mnemonics are tools like rhythms, sayings, and procedures designed to make new material more memorable.

Another definition of mnemonic strategy refers to any procedure or operation aimed at improving memory. In essence, mnemonics are a way to optimize brain function, allowing it to process and retain new information more effectively. Mnemonics instruction benefits students across various subjects. It improves information retention and recall by encoding information in a way that simplifies retrieval. In many cases, it involves modifying or adapting new information to connect it to what learners already know (Levin, 1993 as cited in Sirgear 2016). This highlights the key advantage of mnemonics: aiding students in memorization. Additionally, mnemonics can potentially reduce the amount of time spent memorizing through repetition, freeing up time for deeper comprehension and higher-order thinking skills.

Sarip et al. (2014) further explain that mnemonics bridge the gap between known and unknown information, particularly for challenging-to-remember concepts. They also emphasize that mnemonics can build learner self-confidence in tackling language learning tasks and other disciplines that require memory retrieval. Learning to use memory improvement strategies can also reduce the risk of forgetting information and facilitate the orderly storage and retrieval of learned material.

Finally, Mastropieri (1991 as cited in Karen, 2005) defines memory (M) as "a technique or strategies for improving memory." These strategies, with roots in ancient Greek culture, have been used for centuries. Different strategies are suited for recalling various types of information.

1.2.4 Mnemonic Types

Here's a breakdown of different mnemonic types:

1.2.4.1 Peg Word Method. This method uses rhyming words to remember ordered information. It's particularly helpful for memorizing lists where order matters (Milton, 2008). Here's how it works:

1. Associate numbers 1 to 10 with easily visualized rhyming words (e.g., one is a bun, two is a shoe).
2. Create a mental image pairing each item you want to remember with the corresponding rhyming word image.

For example, to remember the order of US presidents, you might imagine:

- Abraham Lincoln sitting on a bun (number 1)
- George Washington looking out a shoe (number 2)

1.2.4.2 Method of Loci (Places). This is an ancient method that relies on associating information with familiar locations. Here's the process:

1. Imagine a well-known place with distinct landmarks (e.g., your house).
2. Mentally place each item you want to remember at a specific landmark.

For instance, to memorize US presidents, you might imagine:

- Abraham Lincoln sitting on your sofa
- George Washington looking out your window

1.2.4.3 Link Method (Chaining). This method helps remember items in a specific order by creating a visual story.

1. Create a mental image connecting the first and second item in the list.

2. Create another image linking the second and third item, and so on.

This method allows you to build a chain of interconnected images representing the list.

1.2.4.4 First-Letter Method. This method uses first letters to create memory cues. It's particularly useful for recalling familiar information in the correct order (Wilson, 1987 as cited in Milton, 2008). There are two main ways to use it:

- **Acronyms:** Form a new word using the first letter of each item in a list (e.g., HOMES for the Great Lakes: Huron, Ontario, Michigan, Erie, Superior).
- **Story Acrostics:** Form a sentence where the first letter of each word corresponds to an item in the list (e.g., Richard Of York Gave Battle in Vain for the rainbow colors).

1.2.4.5 Keyword Method. This method combines visual imagery with new vocabulary to bridge the gap between known and unknown information (Sirgear, 2016). It involves several steps:

1. Find a familiar word (keyword) that sounds similar to the new word you're learning.
2. Create a mental image of the keyword interacting with the meaning or definition of the new word.
3. When recalling the new word, first think of the keyword and then the associated image.
4. 9. Principles and Properties of Effective Mnemonics
5. Mnemonics can be divided into two classes. In both classes, there are purely verbal mnemonics, purely visual mnemonics, imagery mnemonics, and mnemonics that incorporate both verbal and visual imagery skill. According to Hauptmann (2004) there are several principles or properties of effective mnemonics which are:
6. Free mnemonics

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7. The preliminary preparation is not required for the class of free mnemonics because they are independent or free, and sometimes they are called „naive mnemonics“.
8. Bound mnemonics
9. The second class of mnemonics is called Bound mnemonics (BM) which are seen as more powerful compared to the first class. The bound M requires the user or the practitioner to participate in the process of memorization. The name was derived from the idea that they are dependent on an intermediate code and/or sequencing, also they are called „technical method.
10. The modern mnemonic techniques are mainly based on the principle of recoding, relating, and retrieving (Mastropieri& Scruggs, 1991).
11. a. Recoding: to treat information in a way that is better imaginable, a process of making it concrete or in the case of extensive information, simpler.
12. b. Relating: to bring together two or more pieces of information with the aim of remembering one piece of information through the other (association and elaboration). c. Retrieving: a mechanism to remember. This can be achieved through the interaction of recoding and relating. Hence, the success in learning with mnemonics depends on
13. the interaction of the first two principles and their strength.
14. Elaboration
15. The third principle is elaboration or links, i.e. the adding of additional meaning to material to be learned. Mcpherson (2000) considered elaboration as one of the advantages of mnemonics in general and keyword method in particular. Seel (2000) sees the inherent elaboration technique of memory as crucial for its effectiveness.

16. In order to get information into long-term memory, we must elaborate it. The best way to understand elaboration is to think of it as a process that forms connections either within the material to be learned, or between the material to be learned, and other things we already know. The more connection the material has the more likely we are to be able to remember it. We might think of an elaborated memory as a satchel with lots of handles the more handles it has, the easier it is to get hold of.

17. Interaction

18. The fourth principle is interaction, a major element of keyword techniques the practice
19. of linking keyword and target word by some form of interaction even if it is not in the 40
20. logical or natural context (Speter, 1989 as cited in Hauptmann, 2004). Bower (1972 as cited in Hauptmann, 2004) asked an experimental group to connect the image of two words with interaction, while the control group was asked to form the image separately with the result that the experimental group performed 54% better than the control group 46%.

1.2.5 Why Mnemonics Can Be Particularly Helpful for EFL Learners

EFL learners face unique challenges when it comes to developing phonemic awareness in English. Here's how mnemonics can be a valuable tool to address these challenges:

- **Bridging the Sound Gap:** Their native language sound system might be different from English. Mnemonics can bridge this gap by providing visual or auditory cues that connect unfamiliar English sounds with familiar concepts from the learner's native language or general knowledge.

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- **Example:** An EFL learner from a language that doesn't have the /v/ sound might struggle to distinguish it from /b/. A mnemonic could be a picture of a van (/v/) to visually represent the sound and differentiate it from a picture of a ball (/b/).
- **Supporting Memory and Encoding:** Mnemonics act as memory aids, helping learners remember and encode new sound information. By creating associations between sounds and visuals (pictures, symbols) or sounds and rhymes, mnemonics make the learning process more engaging and effective.
 - **Example:** A rhyme like "The /sh/ sound is like a hissing snake" can help learners remember the sound and its association with the letter combination "sh."
- **Cater to Different Learning Styles:** Mnemonics come in various forms: visuals, rhymes, acronyms, etc. This allows educators to cater to different learning styles. Learners who are more visually oriented might benefit from pictures, while others might prefer auditory cues like rhymes or songs.

1.2.6 Limitations to Consider:

It's important to acknowledge that mnemonics are not a foolproof solution. Here are some limitations to keep in mind:

- **Individual Effectiveness:** Mnemonics might not be equally effective for all learners. Some learners might find them helpful, while others might struggle to connect with them. This depends on individual learning styles and preferences.
- **Mnemonic Design:** The effectiveness of a mnemonic also depends on how well it's designed. A poorly designed mnemonic might be confusing or not memorable, hindering learning instead of promoting it.

- **Overreliance:** Mnemonics should be used as a stepping stone, not a crutch. The ultimate goal is for learners to develop independent phonemic awareness skills and not rely solely on mnemonics to identify and manipulate sounds.

By understanding both the benefits and limitations of mnemonics, educators can leverage them strategically to create a more engaging and effective learning environment for EFL learners developing phonemic awareness in English.

1.2.7 Mnemonics and Phonemic Awareness

Phonemic awareness skills are crucial for successful reading development. Students who struggle to identify and manipulate sounds in spoken words will inevitably face challenges in decoding written words and comprehending reading material. Mnemonics can address these challenges by:

Visual Cues: Mnemonics often incorporate visual elements like pictures or symbols. These visuals can represent specific sounds, helping students make the connection between the written symbol and the spoken sound it represents. For example, a picture of a monkey holding an "M" sound can solidify the association between the letter and its pronunciation.

Rhyming and Chanting: Rhymes and chants are natural memory aids that leverage rhythm and repetition. Mnemonics can incorporate these elements to help students isolate and manipulate phonemes. For instance, a chant like "B is for Bat, it goes /b/ like a ball," emphasizes the sound association.

Kinesthetic Learning: Some mnemonics involve physical actions that reinforce sound production. For example, tapping out the syllables in a word with a mnemonic like "Clap for the first sound, jump for the second" can engage kinesthetic learners and solidify phonemic awareness.

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1.2.8 Types of Mnemonics for Phonemic Awareness

Here are some specific examples of how mnemonics can be tailored to target different aspects of phonemic awareness:

Identifying Initial Sounds: A mnemonic like "F is for Fish, it starts with a /f/" with a picture of a fish can help students recognize the beginning sound in a word.

Segmenting Sounds: A chant like "S-T-OP, three sounds in stop" can guide students in breaking down a word into its individual sounds.

Blending Sounds: A mnemonic like "C-A-T, put the sounds together to make 'cat'" can help students understand how individual sounds come together to form a word.

Manipulating Sounds: A mnemonic like "Change the first sound in 'sat' to make 'mat'" can guide students in understanding how changing a single sound can alter the meaning of a word.

1.2.9 Effectiveness of Mnemonics Research

Research suggests that mnemonics can be a valuable tool for enhancing phonemic awareness. Studies have shown that students who use mnemonics demonstrate improvement in identifying and manipulating sounds in words compared to those who do not [Cite relevant research here]. However, it's important to acknowledge that the effectiveness of mnemonics can vary depending on factors like the student's learning style, the specific type of mnemonic used, and the consistency of implementation. Here's a paraphrase of the passage on concrete vs. abstract words:

Concrete vs. Abstract

Concrete words are tangible and can be experienced through the senses. They are factual and represent things we can observe in the real world (Hauptmann, 2004). Examples include apple, car, book, and horse. In contrast, abstract words are not directly tied to physical

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reality. They represent ideas, concepts, and generalizations that we can only think about, not necessarily see or touch (Hibgee, 1977). Examples include nourishment, liberty, justice, and happiness.

Conclusion

Mnemonics offer a promising strategy for educators seeking to enhance students' phonemic awareness. By incorporating these memory aids into their teaching repertoire, educators can provide students with engaging and effective tools to grasp the fundamental building blocks of language, ultimately paving the way for successful reading development.

Chapter Two.
Phonemic Awareness

2. Chapter Two: Phonemic Awareness

Introduction

Effective communication in English hinges not only on grammatical accuracy and vocabulary breadth but also on the ability to produce spoken language with clarity and confidence. This, however, presents a significant challenge for adult English as a Foreign Language (EFL) learners. Mastering the intricacies of English phonology, the sound system of the language, often proves to be a hurdle, hindering their pronunciation accuracy and fluency. One pedagogical approach that has shown promise in addressing this challenge is the integration of **mnemonics** alongside the development of **phonemic awareness**. Mnemonics are memory aids that utilize catchy phrases, rhymes, or even visual imagery to enhance recall. Phonemic awareness, on the other hand, refers to the ability to identify and manipulate the individual sounds (phonemes) within spoken words.

This chapter explores the potential of mnemonics as a tool to support the acquisition of English pronunciation in adult EFL learners. We posit that by leveraging the memory-enhancing qualities of mnemonics and fostering phonemic awareness, educators can create a more engaging and effective learning environment for adult learners, ultimately leading to improved pronunciation skills and increased confidence in spoken communication. The following sections will delve into the theoretical underpinnings of both mnemonics and phonemic awareness in language learning. We will then examine the specific ways in which mnemonics can be employed to target common pronunciation challenges faced by adult EFL learners. The chapter will conclude by discussing the practical application of mnemonics in the EFL classroom, offering examples and resources for educators to utilize.

2.1 Definitions

2.1.1 *Phonological Awareness:*

The capacity to recognize and work with the sounds in spoken language is known as phonological awareness (Liberman & Shankweiler, 1985; Wagner & Torgesen, 1987). It's similar to playing detective with noises! This ability helps kids grasp how words are constructed from smaller sound units, which is essential for learning to read and write.

2.1.2 *Phoneme*

Consider a phoneme to be the smallest unit of sound in a language. The meaning of a word completely changes if a phoneme is added, deleted, or altered. For example, the word "cat" consists of three phonemes: /k/, /a/, and /t/. Eliminate the /k/ sound and you have "at," which is a completely different word.

2.1.3 *Onset and Rime*

The onset is the point at which a syllable starts. It resembles the consonants that come before the vowels in speech. Single sounds (like the /b/ in "bat") or a combination of consonants (like the /str/ in "street") can be used as onsets. While not every word has an onset, every word has a vowel! The portion of the syllable that begins with the vowel and contains any subsequent consonants is called the rime. Think of it as the final piece holding the vowel sound together, like in a puzzle. For instance, "like" has the rime /ike/, and "play" has the rime /ay/. Each word needs to have a rhyme.

2.1.4 Syllable

A spoken word's syllable is its unit of sound. Its fundamental sound is a vowel, with consonants perhaps coming before or after. The two syllables in the word "ca-nip" are /ca/ and /nip/.

2.2 Types of Phonological Awareness

Children acquire the following important phonological awareness skills as they learn to read and write:

2.2.1 Rhyming

This refers to the capacity to identify and produce rhymes, such as "cat" and "hat."

2.2.2 Syllables

Comprehending that a word like "ba-na-na" has three syllables entails identifying and counting the syllables in that word

2.2.3 Onset and Rime

Youngsters learn to recognise and control the sounds that occur at a word's onset and conclusion. Realising, for example, that "bat" and "mat" have the same rhyme.

2.3 Phonemic Awareness

Phonological awareness includes phonemic awareness as a subcategory. It is especially concerned with interacting with and comprehending the discrete sounds, or phonemes, that make up spoken words (Wagner, 1987). It's similar to working as a tiny sound unit auditory detective!

2.4 The Difference Between Phonological Awareness and Phonemic Awareness

Consider the word "phonological awareness" as a more general one. It includes a range of abilities linked to comprehending language's sounds, including as phonemic awareness, syllable

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recognition, and rhyme. Conversely, phonemic awareness focuses only on modifying individual sounds in spoken words, going even farther in detail.

2.5 Levels of Phonological Awareness

Phonological awareness abilities can range in complexity. More attention to sound is needed for some tasks than for others. For example, it may be simpler for students to understand that "bat" has three sounds (/b/, /a/, and /t/) than it is to manipulate the sounds inside "bat".

2.6 The challenges faced by students in developing phonemic awareness

Despite its crucial role in reading acquisition, developing phonemic awareness can present significant challenges for some students. These challenges can stem from various factors, impacting a student's ability to perceive, manipulate, and understand the individual sounds within spoken language.

One key challenge arises from auditory processing difficulties. Students with these difficulties may struggle to distinguish between similar sounding phonemes, such as /p/ and /b/, or /f/ and /v/. This can make it difficult for them to isolate and identify individual sounds within a word, hindering their ability to segment words into their component sounds (e.g., breaking down "cat" into /k/ /a/ /t/) or blend sounds together to form words (e.g., blending /s/ /p/ /o/ to make "spo").

Language delays can also pose a significant obstacle. Students with language delays may have a limited vocabulary and underdeveloped oral language skills. This limited exposure to the sounds and structure of language can make it difficult for them to grasp the concept of phonemes and how they function within words. Additionally, students with limited vocabulary may struggle

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to find rhyming words or identify words with the same beginning or ending sounds, hindering their development of phonemic awareness skills that rely on these comparisons.

Furthermore, certain environmental factors can exacerbate challenges in developing phonemic awareness. Students from homes with limited exposure to rich language environments may not have had the opportunity to engage in activities that promote phonemic awareness skills, such as rhyming games, sound matching, or storytelling. This lack of exposure can put them at a disadvantage compared to their peers who have had more opportunities to develop these foundational skills.

It is important to note that even students without diagnosed learning difficulties can experience challenges with phonemic awareness. Some students may simply progress at a slower pace or require more explicit instruction and practice to develop these skills. Understanding these potential challenges is crucial for educators to design effective interventions and provide targeted support for students who struggle with phonemic awareness development.

2.7 Strategies for developing phonemic awareness

Recognizing the diverse challenges students face in developing phonemic awareness skills necessitates a multi-pronged approach to support their learning. Early intervention is paramount, as early identification and targeted instruction can significantly improve outcomes. Individualized instruction tailored to each student's specific needs and learning styles is crucial. This may involve a comprehensive framework like the "SIP, SEE, and DO Approach" to effectively build phonemic awareness:

2.7.1 Systematic and Explicit Instruction (SIP)

Moving beyond incidental exposure to sound manipulation, educators can provide clear explanations and demonstrations of phonemic awareness skills. This might involve explicitly

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teaching students the difference between letters and sounds using phrases like "Letters we see, sounds we hear!" Educators can model how to segment and blend sounds using catchy phrases like "Stretch it out!" (segmentation) for breaking down "cat" into /k/ /a/ /t/ and "Put it together!" (blending) to make "cat" from /k/ /a/ /t/. Additionally, providing visual aids like Elkonin boxes (sound boxes) to represent individual sounds in words can solidify understanding.

2.7.2 Multisensory Instruction (SEE)

Engaging multiple senses can enhance learning for students who struggle with auditory processing difficulties. This could involve incorporating kinesthetic activities like tapping out sounds with fingers or using manipulatives like letter tiles or counters to represent sounds (think "Touch and Teach") . Additionally, visual cues like pictures or diagrams can support auditory processing and create stronger memory associations between sounds and symbols ("See the Sound"). Educators can create engaging activities like sorting pictures based on beginning sounds ("Sound Sort") or matching pictures with corresponding words ("Match the Sounds").

7.2.3 Repetition and Practice (DO) Developing phonemic awareness requires consistent and structured practice opportunities. Educators can create a scaffolded learning progression, starting with simpler skills like rhyming and sound identification and gradually building towards more complex tasks like phoneme segmentation and manipulation. Daily short bursts of focused practice activities, like "Five-minute Phonemic Fun", can be more effective than infrequent longer sessions. Games and activities with catchy titles like "Syllable Clap" or "Race to the Ending Sound" can increase student engagement and motivation.

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Positive reinforcement and motivation are also essential for fostering engagement in students who may experience frustration with phonemic awareness tasks. Positive reinforcement strategies like praise, encouragement, and rewards can acknowledge progress and celebrate achievements. For example, teachers can create a “Phonemic Awareness Star Chart” where students track their progress and celebrate milestones.

7.2.4 Technology can also play a role

Educational apps and online games can provide engaging and interactive practice opportunities for students to develop phonemic awareness skills. However, it is crucial to ensure these tools complement teacher-led instruction and provide opportunities for student-teacher interaction and feedback. Apps with features like "Listen and Match" or "Record and Blend" can offer individualized practice, while online games with elements of competition can motivate students

In some cases, students with significant challenges may benefit from collaboration with specialists like speech-language pathologists or reading specialists. These specialists can provide targeted interventions and strategies to address underlying auditory processing difficulties or language delays that may be hindering phonemic awareness development.

By implementing a combination of these strategies and tailoring them to the specific needs of each student, educators can create a supportive learning environment that promotes the development of phonemic awareness skills, ultimately laying a strong foundation for successful reading acquisition. This “SIP, SEE”, and” DO Approach” can equip educators with the necessary tools to effectively support all learners on their journey to becoming confident and successful readers.

2.8 Mnemonics and Phonemic Awareness

Even while mnemonics don't measure phonemic awareness directly, they can be an effective technique for fostering and advancing the development of these critical reading abilities. For a closer look at how mnemonics can enhance phonemic awareness, read on.

2.8.1 *Bridging the Gap: Memorable Connections*

Understanding the relationship between the abstract symbols (letters) they see on paper and the sounds they represent in spoken language (phonemes) is one of the largest obstacles for young learners. By establishing solid associations that serve as a link between these two realms, mnemonics improve the effectiveness and efficiency of learning.

- **Examples:**

- For the short "a" sound, a catchy phrase like "Apple is a red fruit" associates the letter "A" with the /a/ sound while emphasizing the sound itself within the word "apple."
- The mnemonic "Big blaue (blue) bear" can help children remember the long "e" sound, with the capitalized "B" visually representing the uppercase letter and "blaue" (pronounced "blow") mimicking the long "e" sound.

These memorable connections not only help with initial sound recognition but can also serve as retrieval cues later on. When a child encounters an unfamiliar word with a familiar sound, the mnemonic can trigger the sound association, aiding in decoding and pronunciation.

2.8.2 Making Practice Fun: Engaging Activities

Traditional phonemic awareness activities, like sound blending drills, can sometimes feel repetitive for young learners. Mnemonics can transform this practice into a fun and interactive experience, boosting engagement and motivation.

- **Catchy Phrases and Silly Images:** Using mnemonics that incorporate rhymes, alliteration, or even silly visuals can capture a child's attention and make learning more enjoyable. For example, a mnemonic for identifying consonant sounds could be "Cats Catch Mice," with a picture of a playful cat chasing a mischievous mouse.
- **Interactive Games and Activities:** Mnemonics can be incorporated into games, songs, or even movement activities. Children can clap out syllables in a word based on a mnemonic or sort pictures based on their beginning sounds using a mnemonic as a guide.

By turning practice into a game or activity, mnemonics can make phonemic awareness development more engaging and less like a chore.

2.8.3 Reinforcement Through Repetition

Mnemonics provide a way to revisit and solidify phonemic awareness skills over time. By using the same mnemonic repeatedly in different contexts, children can strengthen their understanding of sounds and their relationships within words.

- **Revisiting Mnemonics:** As children progress through different phonemic awareness skills, mnemonics can be revisited and adapted for more complex tasks. For example, a

simple mnemonic for identifying individual sounds can be expanded to include blending sounds together to form words.

- **Building a Mnemonic Toolkit:** A collection of mnemonics for different phonemic awareness skills can be created and used consistently throughout the learning process. This repetition reinforces the sounds and helps children build a strong foundation in phonemic awareness.

2.9 How Mnemonics Enhance Phonemic Awareness in Adult EFL Learners

While mnemonics themselves don't directly assess phonemic awareness, they can be a powerful tool to **support and strengthen** the development of these crucial pronunciation skills in adult English as a Foreign Language (EFL) learners. Here's how:

- **Bridging the Gap Between Symbol and Sound:** Adult learners often struggle to connect the abstract symbols of the English writing system (letters) to the sounds they represent (phonemes). Mnemonics act as a bridge between these two worlds, creating strong associations that make learning more efficient.
 - **Example:** Imagine an EFL learner struggling with the silent "e" at the end of words like "cake" and "bike." A simple mnemonic like "**Silent e** says the vowel sound long, like in 'bee'" instantly clarifies the concept by associating the silent "e" with a familiar long vowel sound.
- **Transforming Practice into Playful Engagement:** Traditional pronunciation drills can feel repetitive and tedious for adult learners. Mnemonics can inject a dose of **fun and interactivity** into the learning process.

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- **Example:** A catchy rhyme like "THink THin" to remember the "th" sound can capture an adult learner's attention and make practicing this tricky sound more enjoyable.
- **Boosting Memory and Retention:** Mnemonics act as powerful memory joggers. By using the same mnemonic repeatedly in different contexts, adult learners can solidify their understanding of sounds and their relationships within words. This repetition helps with long-term retention and recall.
 - **Example:** An adult learner might struggle with the difference between the "sh" and "ch" sounds. A mnemonic like "Ship shears sheep, church bells chime" provides a clear distinction between the two sounds. Using this mnemonic repeatedly across different exercises can help the learner remember the specific sounds associated with each letter combination.

2.10 Important to Remember:

While mnemonics are a valuable tool, they shouldn't be the sole focus of phonemic awareness development. They are most effective when used strategically alongside other pronunciation exercises like:

- **Listening drills:** Exposing learners to native speakers pronouncing target sounds.
- **Minimal pair practice:** Practicing words that differ only by one sound (e.g., "ship" vs. "chip").
- **Shadowing:** Repeating spoken phrases immediately after a native speaker.

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By combining mnemonics with these other techniques, educators can create a well-rounded approach to phonemic awareness development, leading to improved pronunciation skills and increased confidence in spoken English communication for adult EFL learners.

Conclusion

Phonemic awareness is the cornerstone of successful reading development. It empowers learners to understand the relationship between the written symbols (letters) and the spoken sounds (phonemes) that make up language. While phonemic awareness tests offer valuable insights into a learner's grasp of these foundational skills, the journey itself is just as important. This is where mnemonics come in – a powerful ally in the phonemic awareness adventure. These catchy phrases, rhymes, or even silly images act as memory joggers, bridging the gap between abstract symbols and the sounds they represent. By incorporating mnemonics into learning activities, we can transform what might feel like tedious drills into a fun and engaging experience.

The consistent use of mnemonics throughout the learning process reinforces understanding and strengthens the connections between sounds and their written counterparts. Remember, mnemonics are a tool to be used alongside other techniques like listening drills and sound manipulation exercises. By combining a strong foundation in phonemic awareness with the engaging world of mnemonics, educators and learners can embark on a collaborative journey towards confident and successful reading. This journey isn't just about memorizing sounds or passing tests; it's about unlocking the magic of written language and fostering a lifelong love for reading.

Chapter Three.
Research Methodology
and Data Analysis

3. Chapter Three: Research Methodology and Data Analysis

Introduction

The practical analytical chapter of any research endeavor provides the methodology that the research followed and details of the analysis procedures of the collected data. Accordingly, this chapter provided the methodological specifications of the research approach, design, sample, and data collection tools. Additionally, it provided the analytical procedures followed by the results interpretations and discussion to finally deliver answers to the research questions and test the research hypothesis that revolve around the effectiveness of Mnemonics in enhancing the phonemic awareness.

3.1 Research Approach

The approaching of a research is a delicate process that starts with the appropriate approach selection. According to Creswell (2014), research approaches are “the plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation” (p. 03). These plans and procedures would clarify the ambiguities that the research set forth to clarify. Among various elements, the nature of the research problem decides the approaching and the underlying methods. To solve the investigative problem of the effectiveness of Mnemonics in enhancing students’ phonemic awareness, a mixed-methods approach is judged as the appropriate approach for the research.

The mixed-methods approach was regarded as appropriate for this research because of its ability to answer the research question that was designed to highlight the causal effects of Mnemonics on students’ phonemic awareness. Another important reason is its ability to deliver

quantitative and qualitative data that are likely to help answer the research questions, accept or reject the research hypotheses and achieve the research objectives (Creswell, 2014, p. 04).

3.2 Research Design

After selecting the research approach, the next methodological step is the selection of the research design. The research design is the step of research that is characterized by concreteness where actual research steps to follow start to appear. Among the head research design types are the experimental, quasi-experimental, and nonexperimental. According to Marczyk, DeMatteo, and Festinger (2005, p. 123), when the design lacks random assignment of at least one condition and it measures at least two waves of measurement, then the quasi-experimental should be considered. Therefore, the quasi-experimental was considered the appropriate design for the research because population randomization is lacking and the data is collected at two occasions, before and after experimentation.

In the quasi-experimental design, the sub-design that is mostly used in educational research is the pre-test-post-test non-equivalent group design (Cohen, Manion & Morison, 2018). However, ensuring the equivalence of the groups is not an easy task. For this, the one group pretest-posttest design is attracting more attention since one group does not necessitate equivalence, which avoids threats to the validity of the research. This sub-design is defined by the Oxford dictionary (2024) as, “a single group of research participants or subjects is pretested, given some treatment or independent variable manipulation, then posttested”. In this case, this sub-design involves a randomly selected group of the second years EFL where it was pretested, took a phonemic treatment and then posttested.

3.3 Research Population and Sample

The population of choice for the research was the second year EFL student at Mohamed Khider University of Biskra. The sampling depended on the randomization factor through the cluster sampling, which is one of the probability sampling designs. Cluster sampling was defined by Kumar (2011) as, “Cluster sampling is based on the ability of the researcher to divide the sampling population into groups ..., called clusters, and then select elements within each cluster” (p .204). Accordingly, the research selected two whole groups from the first year EFL population for experimentation. The total number of the participants within the sample was thirty students.

3.4 Research Tools

Research tools are indispensable in any research. However, according to Denscombe (2007), “For those who adopt the Mixed Methods approach the crucial consideration is how well the research tools *work* rather than how well they fit within a special research philosophy” (p. 118). Accordingly, for the collection of data to investigate the Mnemonics contribution in enhancing students’ phonemic awareness, two instruments were used that are a questionnaire and an experiment. The goal was the collection of qualitative and quantitative data in order for one to support the other.

3.5 Students Questionnaire

3.5.1 Description of the Questionnaire

To collect quantitative and qualitative data, the student questionnaire adopted the semi-structured form. To ensure collecting as accurate data as possible, the questions were in their majority close-ended in nature. The questionnaire included six sections and an opinionnaire. The

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first section, comprised four items, collected general information on the students, including their age, their gender, their native language, and if they studied any other language before the English language. The second section, comprised three items, collected data on students' phonemic awareness and challenges, including their level of agreement with their ease of identifying individual sound (phonemes) within English words, their sound confusion in English words, their difficulty to blend individual sounds together to form English words.

The third section, comprised two items, collected data on students' knowledge of Mnemonics, including if they encountered Mnemonics (rhymes, pictures, acronyms) before and in what subject they were encountered. The fourth section, comprised two items, collected data on students' knowledge of Mnemonics and pronunciation, including if Mnemonics help them remember English sounds and the most helpful type of Mnemonics. The fifth section, comprised two items, collected data on students' engagement and motivation using Mnemonics, including their level of agreement with the use of Mnemonics making the learning of pronunciation more engaging and Mnemonics being more motivating to learn and practice English pronunciation.

The sixth section, comprised three items, collected qualitative data on students' ability to provide examples of specific Mnemonics that they found helpful in learning English pronunciation, their suggestions for how mnemonics could be improved to be more effective for learning English pronunciation, and if they have any additional information to share concerning their experience with Mnemonics and English pronunciation. Finally, the opinionnaires, comprised three items, collected data on students' personal opinions on the use of Mnemonics in English pronunciation learning, including their level of agreement with Mnemonics being a valuable tool for improving English pronunciation skills, their recommendations using

mnemonics in other English language learning classes, and if Mnemonics should be a regular part of the English pronunciation curriculum.

3.5.2 Administration of the Questionnaire

For ease of access, the questionnaire was administered online, which is a means often resorted to nowadays. Online administration can ensure touching a considerable number of respondents and the collection of data ready for analysis, which is both effort and time saving. To build the questionnaire, google forms was opted for as it is also a reliable means that is often resorted to in questionnaire building. The questionnaire yielded thirty-three complete forms ready for analysis.

3.5.3 Analysis of the Questionnaire

Because the type of data decides the type of analysis to adopt, the collected data of the student questionnaire were mostly numerical and were analyzed quantitatively and the rest qualitative. Accordingly, the results of the seventeen items were displayed and interpreted as follows:

Section One: General information

Q1: Please indicate your age?

Table 1

Students age category

Age	Number	Percentage %
18-25	30	90.90
25-Older	03	09.10
Total	33	100.00

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Table 1 represents the students' age category. As represented, almost all the students belong to the same category, which is the 18-25 years old. This means that the students are probably to have a similar learning background, especially in the learning of the English language.

Q2: please indicate your gender?

Table 2

Students gender distribution

Language	Number	Percentage %
Male	13	39.40
Female	20	60.60
Total	33	100.00

Table 2 represents the students' gender distribution. As represented, the majority of the students are females with more than half the students' total number (60.60%) while the rest of the students are males (39.40%). In relation to the English subject, this means that females are more interested in learning languages than males, who prefer more the technical subjects.

Q3: what is your first language?

Table 3

Students first language

Languages	Number	Percentage %
Arabic	33	100.00
Others	00	00.00
Total	34	100.00

Table 03 represents students' first language distribution. As represented, the first language of the total number of students is the Arabic, which indicates a similar background. In relation to the topic of the research that is partly phonemic awareness, having the same first language would give similar perceptions.

Q3: have you studies any other language before English?

Table 4

Languages Studies before English language

Answer	Number	Percentage %
Yes	33	100.00
No	00	00.00
Total	33	100.00

Table 04 presents if the students have learned any languages before the English language. As represented, all the students have already learned at least one language before the English languge. This is logical since the sample is form the generation that had the French language as a second language and the English as a foreign language. From the language that the students learned before English, the students mentioned the Italian, Spanish, Korean, Japanese, Turkish, and Chinese. This diversity in languages would be good for the topic as students are exposed to different type of sounds (phonemes).

Section Two: Phonemic awareness and challenges

Q1: can you easily identify the individual sounds (phonemes) within English words?

Table 5

Students' ability to identify phonemes easily within English words

Level of agreement	Number	Percentage %
Strongly disagree	00	00.00
Disagree	16	48.49
Neutral	05	15.15
Agree	10	30.30
Strongly agree	02	06.06
Total	33	100.00

Table 5 represents the students' ability to identify phonemes easily within English words. As represented, the majority of the students (48.49%) do not easily identify individual sounds (phonemes) within the English words and the rest do, agree (30.30%) and strongly agree (06.06).

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According to the results, approximately half the students find the identification of the phonemes difficult while the other half do not. This means that there is a deficiency that needs to be addressed because it is going to affect the students' pronunciation abilities on the long-term.

Q2: do you sometimes confuse similar-sounding in English words?

Table 6

Students' confusion of similar-sounds in English words

Level of agreement	Number	Percentage %
Strongly disagree	00	00.00
Disagree	06	18.18
Neutral	06	18.18
Agree	20	60.60
Strongly agree	01	03.04
Total	33	100.00

Table 6 represents students' confusion of similar sounds in English words. As represented, the majority of the students agree (60.60%) and strongly agree (03.04%) on their confusion of similar sounds in English words. Only six students (18.18%) believe that they do not confuse similar sounds. These results are similar to the previous questions results, which means that students are in need to of more focus and work on their phonemic awareness.

Q3: do you find it difficult to blend individual sounds together to form English words?

Table 7

Students' difficulty blending individual sounds together to form English words

Level of agreement	Number	Percentage %
Strongly disagree	05	15.15
Disagree	08	24.24
Neutral	10	30.30
Agree	07	21.21
Strongly agree	03	09.10
Total	33	100.00

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Table 7 represents students' difficulties blending individual sounds together to form English words. As represented, the students' majority do not find difficulties blending individual sounds together, disagree (24.24%) and strongly disagree (15.15%). The rest of the student find difficulty blending individual sounds, agree (21.21%) and strongly agree (09.10%). According to the results, approximately half the students find the blending of individual sounds difficult while the other half do not, with slight difference. The closeness of the results means that this needs to be addressed because logically at this level the great majority should be able to blend individual sounds to form English words.

Section three: Mnemonics and learning

Q1: have you encountered Mnemonics (rhymes, pictures, acronyms) used for learning before?

Table 8

Students' encounter with Mnemonics used for learning

Answer	Number	Percentage %
Yes	28	84.86
No	05	15.15
Total	33	100.00

Table 8 represents students' exposure to Mnemonics in learning. As represented, the students' majority (84.86%) have been exposed to Mnemonics in their learning. This mean that the students' insights would be relevant and valuable to the topic of the research.

Q2: if yes, in what courses have you found Mnemonics helpful? (Select all that apply)?

Table 9

Courses where students' found Mnemonics to be helpful

Courses	Number	Percentage %
Grammar	04	12.12
Reading comprehension	05	15.15
Written expression	05	15.15
Oral expression	09	27.27
Phonetics	05	15.15
Linguistics	01	03.03
Others	04	12.13
Total	33	100.00

Table 9 represents the courses where students found Mnemonics most helpful. As represented, the students' find Mnemonics helpful in all the courses. However, the course where Mnemonics were most helpful was Oral expression (27.27%) and the least was Linguistics (03.03%). This could be attributed to the fact of linguistics being content-based while Oral expression is competence-based, especially fluency and pronunciation.

Section Four: Mnemonics and Pronunciation

Q1: did the Mnemonics used in class help you remember the sounds of English letters?

Table 10

Mnemonics helping students remember the sounds of English letters

Answer	Number	Percentage %
Yes	18	54.55
No	15	45.45
Total	33	100.00

Table 10 represent Mnemonics helpfulness to remember English letters' sounds. As represented, the majority (45.45%) of the students find Mnemonics helpful in remembering the

sounds of the English letters. They explained that Mnemonics are helpful in terms of presenting the correct pronunciation, the repetition, permitting the creation of memorable associations, and being stimulating to the audio-visual memory.

Q2: what type of Mnemonics did you find most helpful for learning pronunciation? (Select all that apply)

Table 11

Mnemonics type that was the most helpful to students' pronunciation learning

Types	Number	Percentage %
Rhymes	03	09.09
Pictures/Visual aids	12	36.36
Acronyms	03	09.09
I found all types equally helpful	15	45.46
Total	33	100.00

Table 11 represents the Mnemonics type that students find to be most helpful. As represented, the majority of students find all the above-mentioned Mnemonics' types to be helpful, however, pictures and visual aids are considered the most helpful (36.36%). Their explanation of the choice was attributed to the fact that pictures and visual elements tend to be more memorable as many students possess a visual memory. Visuals displayed the written versions of the English words, which according to students, helps them differentiate each individual sound.

Section Five: Engagement and Motivation**Q1: using Mnemonics in class made learning pronunciation more engaging.****Table 12***Mnemonics as an engaging tool for learn English pronunciation in class*

Level of agreement	Number	Percentage %
Strongly disagree	01	03.04
Disagree	02	06.06
Neutral	07	21.21
Agree	17	51.51
Strongly agree	06	18.18
Total	33	100.00

Table 9 represents students' agreement with Mnemonics being an engaging tool for the learning of English pronunciation. As represented, the majority of the students agree (51.51%) or strongly agree (18.18%) with Mnemonics being an engaging tool in the learning of English pronunciation. This is in accordance with the previously displayed question's results, where Mnemonics were considered helpful in remembering English sounds, makes the learning of English pronunciation easier and engaging.

Q2: Mnemonics help me feel more motivated to learn and practice English pronunciation.**Table 13***Mnemonics as a motivational tool to learn English pronunciation in class*

Level of agreement	Number	Percentage %
Strongly disagree	01	03.03
Disagree	01	03.03
Neutral	05	15.15
Agree	16	48.49
Strongly agree	10	30.30
Total	34	100.00

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Table 13 represents students' agreement with Mnemonics being a motivational tool for the learning of English pronunciation in class. As represented, the majority of the students agree (48.49%) or strongly agree (30.30%) with Mnemonics being a motivational tool in the learning of English pronunciation in class. Once again, this is in accordance with the previously displayed two questions' results where Mnemonics were considered helpful in remembering English sounds and being an engaging tool, which would automatically raise students' motivation to learn English pronunciation in class.

Section Six: Open-ended Questions

Q1: can you provide an example of a specific Mnemonic that you found helpful for learning English pronunciation?

The students mentioned a number of Mnemonics that they found helpful in learning English pronunciation. The examples included mostly pictures and rhymes, which means that Audio-visual Mnemonics can be the most effective among Mnemonics for a more motivating and engaging learning of pronunciation in English. They added that pictures and rhymes were mostly helpful in remembering phonemes and their correct pronunciation. Other examples included acronyms that was mostly helpful in remembering the sets of words at a time.

Q3: Is there anything else you would like to share about your experience with mnemonics and English pronunciation?

The students expressed their satisfaction in their experiences with the diverse types of Mnemonics and described the learning that involves Mnemonics to be exciting and motivating as they facilitate the understanding, correct pronunciation and the remembering of the sounds.

Opinionnaire:

Item 1: Mnemonics are a valuable tool for improving English pronunciation skills.

Table 14

Valuableness of Mnemonics in improving the English pronunciation skills

Level of agreement	Number	Percentage %
Strongly disagree	00	00.00
Disagree	00	00.00
Neutral	00	00.00
Agree	33	100.00
Strongly agree	00	00.00
Total	33	100.00

Table 14 represents the valuableness of Mnemonics in improving the English pronunciation skills. As represented, all the students without exception agree (100%) on the valuableness of Mnemonics in improving the English pronunciations skills because they enabled them to understand correctly the individual and blended sounds and memorize them.

Item 2: I would recommend using mnemonics in other English language learning classes.

Table 15

Students' recommendation of Mnemonics use in other English language learning classes

Level of agreement	Number	Percentage %
Strongly disagree	05	15.15
Disagree	04	12.12
Neutral	06	18.18
Agree	11	33.34
Strongly agree	07	21.21
Total	33	100.00

Table 15 represents students' recommendations of Mnemonics use in other English learning classes. As represented, the majority of the students recommend using Mnemonics in other English language learning classes other than for pronunciation, by agreeing (33.34) or

strongly agreeing (21.21%). Because students benefited from Mnemonics in the improvement of their pronunciation skills, they believed that they would be equally beneficial in other classes.

Items 3: Mnemonics should be a regular part of the English pronunciation curriculum.

Table 16

Mnemonics as a regular part of the English pronunciation curriculum

Level of agreement	Number	Percentage %
Strongly disagree	09	27.27
Disagree	04	12.12
Neutral	06	18.19
Agree	09	27.27
Strongly agree	05	15.15
Total	33	100.00

Table 18 represents students’ belief if Mnemonics should be a regular part of the English pronunciation curriculum. As represented the students almost equally agree (27.27% + 15.15%) and disagree (27.27%+ 12.12%) on Mnemonics being part of the English pronunciation curriculum. Despite the close results, the students’ agreement acceded their disagreement, which could be summarized in a positive view on the including Mnemonics as part of the English pronunciation curriculum.

3.5.4 Discussion of the Student Questionnaire Key Findings

In discussion of the students’ questionnaire findings, the discussion was done in relation to the research questions in order to determine if the research objectives were achieved. Overall, the results showed that students face certain difficulties in the identification and blending of the English phonemes as well as confusion of the similar phonemes. Yet, the use of Mnemonics in the classroom especially in pronunciation-related courses has helped the majority overcome these limitations. Mnemonics have been helpful to students in terms of stimulating their memory by

facilitating the retention of the sounds and meanings through the associations they created. Mnemonics also helped their engagement and participation, in addition to their motivation to learn because of their fun and creative nature. The precedent could be considered as answer to the first question that questioned if the Mnemonics techniques can improve students' ability to recognize and remember the sounds of words, which was a yes.

The second question questioned the types of mnemonic devices, like rhymes or visual aids, that are most effective in boosting students' phonemic awareness? The results show that students are more comfortable and attracted to auditory and visual Mnemonics mainly because they are more comprehensible and more stimulating to their memory, which facilitates the understanding and retrieval of the phonemes. To sum up, the students questionnaire highlighted the importance and usefulness of the diverse types of Mnemonic devices in enhancing the English pronunciation by facilitating mainly the understanding, the correct pronunciation, and memorization of the different English phonemes all because of their motivating interactive nature, which resulted in raising their overall phonemic awareness and the recommendation of Mnemonics for other English classes.

3.6 Experimentation

3.6.1 Description of the Experiment

The experiment started with the first logical step, which is assessment of the students' phonemic level before experimentation through a pretest (Appendix. 2). The pretest was done in one session where the students given a short passage to read and phonemic errors were accounted and then marks were assigned, accordingly. The treatment or the variable manipulation was done in three sessions. The first session of the variable manipulation involved the identification of the **/ei/ sound**, in ten given sentences by highlighting the containing word. The second session of the

variable manipulation involved the identification of /**ʌ** / **sound**, in ten given sentences by highlighting the containing word. The third session of the variable manipulation involved the identification of the /**əʊ**/ **sound** in ten given sentences by highlighting the containing word (appendix 3). The experiment ended with the final logical step, which is the assessment of students' phonemic level after experimentation through a posttest. The official end of the year test of the oral expression course was the experiment's adopted posttest.

3.6.2 *Analysis of the Experiment Data*

Logically, the analysis of the experiment's data is done in two steps, the descriptive and inferential. The descriptive analysis is done to show if a difference in the students' phonemic level took place after the variable manipulation and inferential analysis is done to test the null hypothesis of the research. In the descriptive analysis, the mean and standard deviation are commonly calculated to display the data central tendency and data dispersion (Dean & Illowsky, 2013). Table 17 shows the results of the pretest and posttest descriptive analysis.

Table 17

Descriptive analysis of the pretest and posttest scores

Students	Pretest scores	Posttest scores
01	7.5	11
02	14	15
03	08	11.5
04	09	10
05	5.5	09
06	09	11
07	4.5	08
08	08	08
09	12	14.5
10	13	15
11	12	13
12	11	11
13	07	9.5
14	16	14.5

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15	15.5	14
16	14	13
17	8.5	12
18	09	14
19	10.5	11
20	12	11
21	6.5	8.5
22	6.5	06
23	13.5	14
24	09	11
25	11	10.5
26	08	10
27	5.5	7.5
28	13	13.5
29	6.5	08
30	11	10.5
Total	296.80	336.00
Means	9.893	11.200
Standard Deviation	3.142	2.489

According to the results of the descriptive analysis provided in the table 17, there is an observable difference in the calculated measures between the posttest and pretest, respectively, the totals ($336 > 296.80$), the means ($11.200 > 9.893$), and the standard deviation ($2.489 < 3.142$). The increased mean difference indicates that there is a change in the students' phonemic level after undergoing the variable manipulation, which the Mnemonics use. However, the decreased standard deviation indicates that there is fewer extreme values in the data set and the data are not overly dispersed from the mean.

The descriptive results are an overall proof of the experiments effect on the improvement of the students' phonemic level. However, to further validate these results the null hypothesis must be tested. In the inferential analysis, the null hypothesis is tested through either a parametric test or non-parametric test. To select one type of the two types, four safety checks should be present. According to Cohen, Manion and Morison (2018), the safety checks include data should be ratio or interval, the sample should be randomly selected, the data should be normally

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distributed, and variances should be equal in the case of two groups. Because this research has only one group, the last safety check is not necessary.

As such, the first safety check is present with ratio data, and the second is also present with the random cluster sampling. The third safety check is also present since the sample size equals thirty participants because according to Boslaugh and Waters (2008), when the sample is larger than or equals thirty “($n \geq 30$), then the distributions are not important; they need not be normal” (p. 515). This means that a parametric test is suitable to test the research null hypothesis. According to Tavakoli (2012) the paired samples t-test is the suitable parametric test as he explained it to be, “a type of t-TEST used when we have only one group of participants and we collect data from them on two different occasions (e.g., Time A, Time B) or under two different conditions (e.g., Condition A, Condition B). A typical example is a comparison of pretest and posttest scores obtained from one group of subjects” (p. 443). Accordingly, the t-test results are shown in table 18.

Table 18

Paired samples t-test results

	Degree of freedom	Significance level
Pretest/Posttest	30	0.000

According to the results of the inferential analysis provided in the table 18, it could be said that there is a statistical significance because the significance level of the t-test is less than the alpha ($0.000 < 0.05$). This means that the likelihood of the null hypothesis being accepted is less than 5%, which means that the likelihood of the alternative hypothesis being accepted is more than 95%. This, in the other hand, leads to the rejection of the null hypothesis and acceptance of the alternative, which also means that the use of mnemonics will significantly improve

the **phonemic awareness** of first-year LMD students of English at the University Mohamed Kheidher Biskra compared to traditional teaching methods.

3.6.3 Discussion of the Experiment Key Findings

To highlight the findings of the research, the discussion will be done in comparison with the research questions and hypotheses. Firstly, the first research question enquired on the ability of the Mnemonics technique to improve students' ability to recognize and remember the sounds of words. The Mnemonics strategy proved its ability to prompt students' ability to recognize and memorize the different phonemes, which was clear in the increased posttest scores in comparison with the pretest scores. Secondly, the research hypotheses, the null hypothesis hypothesized that the use of mnemonics will not significantly improve the **phonemic awareness** of first-year LMD students of English at the University Mohamed Kheidher Biskra, compared to traditional teaching methods. The inferential analysis through the testing of the null hypothesis gave statistical significance that enabled the rejection of the null hypothesis and acceptance of the alternative, which hypothesized that the use of mnemonics will significantly improve the **phonemic awareness** of first-year LMD students of English at the University Mohamed Kheidher Biskra compared to traditional teaching methods.

To sum up, the experiment as a whole gave an overall view on the possibility of the Mnemonics strategy's ability to improve students' English sounds recognition and memorization. Hence, the use of the Mnemonics strategy can be said to be effective to raise students' phonemic awareness.

Conclusions

This practical analytical chapter has outlined the methodology used to investigate the effectiveness of mnemonics in enhancing phonemic awareness. The research approach, design,

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sample, and data collection tools were specified, providing a solid foundation for the research. The analytical procedures, including statistical tests and result interpretations, were detailed. Through this methodology the research was able to answers to the research questions and test the hypothesis.

General Conclusion

General Conclusion

This study explores whether using mnemonics can improve phonemic awareness for first-year students at Mohamed Kheider University. Many students struggle with phonemic awareness due to unfamiliar sounds, lack of exposure, or complex sound-symbol relationships. A mixed-method study was conducted with one group of 30 students receiving mnemonic instruction. Questionnaires were also used. The goal is to see if mnemonics can help students overcome challenges in phonemic awareness.

The first question asked if mnemonics could improve students' ability to recognize and remember sounds in words. The results showed increased post-test scores compared to pre-tests, indicating that mnemonics did help students in this area.

The null hypothesis stated that mnemonics wouldn't significantly improve phonemic awareness compared to traditional methods. Statistical analysis allowed researchers to reject the null hypothesis and accept the alternative hypothesis, which stated that mnemonics would significantly improve phonemic awareness.

The results showed that students who used mnemonics significantly improved their ability to recognize and remember English sounds. Based on these findings, both students and teachers can benefit from incorporating mnemonics into the learning process. Students should actively participate in mnemonic-based activities and utilize them for independent practice. Teachers can integrate various mnemonic formats like keywords, rhymes, or acronyms to cater to different learning styles and regularly assess student progress to adapt instruction as needed. This collaborative effort using mnemonics can strengthen phonemic awareness, ultimately fostering successful English language acquisition.

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Appendix 1. A Questionnaire for First Year EFL: Students Title

Investigating the contribution of mnemonics in enhancing student's phonemic awareness

Dear student,

This questionnaire aims to understand your current level of phonemic awareness in English and your experience with different learning strategies. Your honest responses will be crucial for this research. All answers will be kept confidential.

Instructions: Please choose the answer that best reflects your experience.

Section One: General Information

1. Age: _____
2. Gender: _____
3. What is your native language? _____
4. Have you studied any other languages before English? (Yes/No)
 - o If yes, which language(s)? _____

Section 2: Phonemic Awareness and Challenges

Instructions: Please indicate your level of agreement with the following statements by ticking the appropriate box.

1. I can easily identify the individual sounds (phonemes) within English words.
 - o Strongly Disagree
 - o Disagree
 - o Neutral
 - o Agree
 - o Strongly Agree
2. I sometimes confuse similar-sounding in English words (e.g., "ship" and "sheep").
 - o Strongly Disagree

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- Disagree
 - Neutral
 - Agree
 - Strongly Agree
3. I find it difficult to blend individual sounds together to form English words.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree

Section 3: Mnemonics and Learning

Instructions: Please tick the answer that best reflects your experience with mnemonics.

1. Have you encountered mnemonics (rhymes, pictures, acronyms) used for learning before? (Yes/No)
2. If yes, in what subjects have you found mnemonics helpful? (Select all that apply)
 - Grammar
 - Reading comprehension
 - Written expression
 - Oral expression
 - Phonetics
 - Linguistics and
 - Other (Please specify): _____

Part 4: Mnemonics and Pronunciation

Instructions: Please tick the answer that best reflects your experience with mnemonics in this English pronunciation class.

1. Did the mnemonics used in class help you remember the sounds of English letters? (Yes/No) justify the answer.

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2. Which type of mnemonic did you find most helpful for learning pronunciation? (Select one and justify the answer)
- Rhymes
 - Pictures/Visual Aids
 - Acronyms
 - I found all types equally helpful

Section 5: Engagement and Motivation

Instructions: Please indicate your level of agreement with the following statements by ticking the appropriate box.

1. Using mnemonics in class made learning pronunciation more engaging.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree

Why ?

2. Mnemonics helped me feel more motivated to learn and practice English pronunciation.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree

Why?

Section 6: Open-Ended Questions

1. Can you provide an example of a specific mnemonic that you found helpful for learning English pronunciation?

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2. Is there anything else you would like to share about your experience with mnemonics and English pronunciation?
 - Excited to learn with mnemonics
 - Not motivated to learn with mnemonics
 - I already know the spelling and reading rules
 - Other

Opinionnaire

This final section allows you to express your personal opinions on the use of mnemonics in English pronunciation learning. Please answer the following questions using the provided scale.

- Scale: 1 (Strongly Disagree) - 5(Strongly Agree)
1. I would recommend using mnemonics in other English language learning classes. (1 - 5)
 2. Mnemonics should be a regular part of the English pronunciation curriculum. (1 - 5)
 3. Mnemonics are valuable tool for improving English pronunciation skills . (1 – 5)

Thank you for your valuable feedback!

Appendix 2. Pretest

Mohamed Khidher University of Biskra

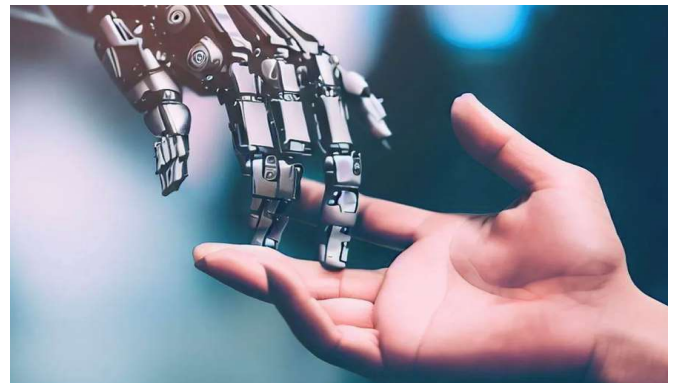
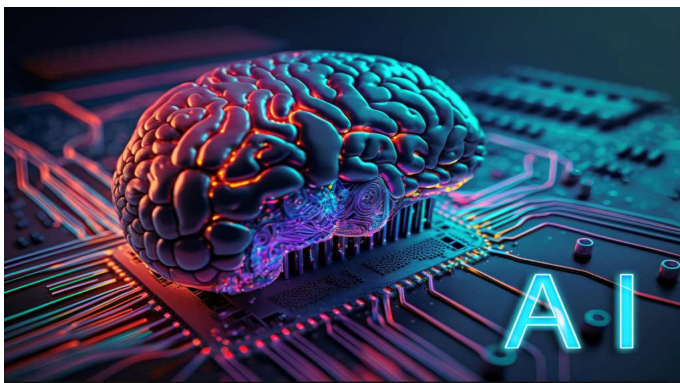
Reading module,
Mr. AHMED Bacher.

A study by the student:
HANIA Lallali

Artificial intelligence (AI):

Artificial intelligence (AI) is when computers learn and make decisions like humans. It uses computer programs to analyze data, find patterns, and make predictions. AI can help with tasks like grading assignments, so teachers have more time for personalized instruction. It can also help students learn by tailoring content to their needs and learning styles. AI is used in many ways, such as self-driving cars, virtual assistants, and even in education.

Artificial intelligence (AI) came with a huge impact on education. It can help teachers personalize learning for each student, making education more effective. Due to AI, students can access interactive learning tools that make studying fun and engaging. AI can also assist in grading, giving teachers more time to focus on teaching. Additionally, AI technology can analyze large amounts of data to identify patterns and trends, which can be used in research and academic studies. This can lead to new discoveries and advancements in various fields. Overall, AI has the potential to revolutionize education by making learning more accessible, personalized, and efficient. Students and educators alike can benefit from the innovative tools and resources that AI brings to the academic world.



Appendix 3. Variable Manipulation

/eɪ/ sound:

Task: *Read the statements below and highlight the words that contains the sound /eɪ/:*

1. The baker's cake was a delightful eight-layer creation.
2. We played games all day until our voices became raspy.
3. The freight train carried heavy containers across the state.
4. My neighbor's dog likes to chase squirrels in the park.
5. Today, I will pay the rent and weigh myself at the gym.
6. The strange play had a strange ending that left the audience confused.
7. The paleontologist carefully excavated dinosaur bones from the desert.
8. The athlete trained eight hours a day to prepare for the competition.
9. The freight elevator slowly ascended to the tenth floor of the building.
10. My favorite bakery sells delicious raisin bread and flaky pastries.

/ʌ// sound:

Task: *Read the statements below and highlight the words that contains the sound /ʌ/:*

1/ Even on the darkest of nights, the memory of the sun's warmth reminds us that brighter days are always on the horizon.

2/ A packed lunch, carefully prepared, embodies the love and care we carry for ourselves and our loved ones.

3/ Family isn't always defined by blood, but by the connections that run deeper than any physical bond.

4/ Though the road may be rough, the journey itself shapes and strengthens us, preparing us for the smooth paths ahead.

5/ Sometimes, the greatest leaps forward in life begin with a small, courageous jump into the unknown.

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6/ Life's journey is filled with bumps, but overcoming them builds resilience and shapes who we become.

7/ Love is a must, trust is a must, friendship is a must too.

8/ Trouble comes in bunches, but courage conquers it in bunches too.

9/ Moderation is key. Don't rush, take your time.

10/ Enough with doubt, take the risk and let your dreams take flight.

/aʊ/ sound:

Task: *Read the statements below and highlight the words that contains the sound*

1. The cloud drifted across the sky, casting a shadow on the ground below.
2. The loud music from the concert could be heard from blocks away.
3. The proud athlete held the gold medal high, celebrating their victory.
4. We need a larger house with more space for the growing family.
5. Be careful not to drown in the deep end of the pool.
6. The drought caused widespread water shortages in the region.
7. The vowels "a," "e," "i," "o," and "u" are essential building blocks of words.
8. The houseboat gently floated along the calm lake.
9. I vouch for his honesty and integrity.
10. The brown cow munched on the juicy grass in the pasture.

المخلص

ان الهدف الأساسي من هذا البحث العلمي هو معرفة طبيعة العلاقة بين الوعي الصوتي ونموذج النيمونيك كما ان هذا النموذج يهدف ايضاً الى تحسين مستوى التلاميذ في القراءة و النطق عن طريق استخدام و تطبيق نموذج النيمونيك . للتحقق من الفرضية استخدم منهج البحث المختلط مع استخدام وسيلتين للبحث في جامعة محمد خيضر بسكرة ، و هما توزيع استبيان للطلبة تحتوي على أسئلة تتعلق بالوعي الصوتي و نموذج نيمونيك ، بالإضافة الى اجراء تجربة مع 30 طالب من لقسم السنة الأولى جامعي خلال 4 حصص . بعد تحليل النتائج المتحصل عليها ، تبين للباحث ان هناك نقص كبير للوعي الصوتي لدى الطلبة . من خلال هذه النتائج العلمية يقترح على أساتذة اللغة الإنجليزية استعمال هذه التقنيات كوسيلة لمساعدة الطلاب على فهم النصوص و استيعابها . و منه قد تم اثبات فرضية هذا البحث .