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**THE EFFECTIVENESS OF NATURAL LANGUAGE  
PROCESSING TOOL USAGE ON MOTIVATION,  
CONFIDENCE AND PERFORMANCE IN  
ENGLISH PRONUNCIATION  
LEARNING**



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**MISHALINI A/P CHANDRAN**

**SULTAN IDRIS EDUCATION UNIVERSITY**

**2024**



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DISSERTATION PRESENTED TO QUALIFY FOR A MASTER'S DEGREE IN  
EDUCATION  
(RESEARCH MODE)

FACULTY OF COMPUTING AND META-TECHNOLOGY  
SULTAN IDRIS EDUCATION UNIVERSITY

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## ACKNOWLEDGEMENT

First and foremost, praises and thanks to God for the blessings and guidance throughout my research. I have never come this far without the shower of blessings from The Almighty. Secondly, I would like express my heartfelt thanks to my Research Supervisor Dr Wang Shir Li from Faculty of Arts, Computing and Creative Industry (FSKIK), Sultan Idris Education University (UPSI) for giving me this golden opportunity to proceed my research under her. The guidance and motivation from Dr Wang Shir Li made me believe myself more during this period of time. I am so grateful and feel so appreciated for all the guidance she provided in the midst of her busy schedule. The constructive comments and valuable ideas from Dr Wang Shir Li helped me a lot in improving the quality of my research. Thirdly, I would like to express my sincere gratitude to Associate Professor Dr Charanjit Kaur A/P Swaran Singh from Faculty of Languages and Communication (FBK), Sultan Idris Education University (UPSI) for agree to validate my Research Questionnaire. Thanks a lot for her time and consideration. Lastly, I would like to thank my dear family, friends and all my loved ones for the consistent support and motivation. Their prayers, love and understanding lead me to complete my research proposal on given time frame.





## ABSTRACT

Learning English pronunciation is crucial in enhancing primary school pupils' communication skills, yet many struggle. This study evaluates the effectiveness of a natural language processing (NLP) tool in improving primary school pupils' English pronunciation by measuring motivation, confidence, and performance. Conducted in a primary school in Johor, the research used a randomized controlled trial (RCT) design with 30 Year 3 pupils divided into two groups (15 pupils for each group), which are a control and a treatment group. The English teacher assessed motivation, confidence, and performance using a rubric-based evaluation, with a Cronbach's Alpha value of 0.932, indicating high reliability. This study compares conventional teaching methods with NLP. With  $\alpha = 0.10$ , multivariate analysis of variance (MANOVA) assessed the effectiveness of the teaching methods. The combined dependent variables significantly differed based on teaching methods, Pillai Trace = 0.95,  $F(24, 5) = 3.72$ ,  $p < 0.074$ , partial  $\eta^2 = 0.95$ . With  $\alpha = 0.05$ , paired  $t$ -tests were conducted to determine whether the two groups' motivation, confidence, and performance differences were statistically significant. For motivation, confidence and performance aspects, the mean differences were significantly different,  $p$ -values  $< 0.05$  for the treatment group but not for the control group,  $p$ -values  $> 0.05$ . The study demonstrates that integrating NLP tools into English pronunciation teaching significantly enhances pupils' motivation, confidence, and performance compared to conventional teaching methods. The use of NLP tools can strengthen personalized learning in learning English pronunciation.





## KEBERKESANAN *NATURAL LANGUAGE PROCESSING* (NLP) TERHADAP MOTIVASI, KEYAKINAN DAN PRESTASI DALAM PEMBELAJARAN SEBUTAN BAHASA INGGERIS

### ABSTRAK

Pembelajaran sebutan bahasa Inggeris penting bagi murid sekolah rendah untuk berkomunikasi dengan baik, namun ramai menghadapi kesukaran tersebut. Kajian ini menganalisis keberkesanan alat pemprosesan bahasa tabii atau natural language processing (NLP) bagi menambah baik sebutan bahasa Inggeris mereka dengan mengukur tiga aspek, iaitu motivasi, keyakinan, dan prestasi. Pendekatan kuantitatif Ujian Terkawal Rawak atau randomized controlled trial (RCT) di salah sebuah sekolah rendah Tamil di Johor. Seramai 30 orang murid Tahun 3 dibahagikan kepada dua kumpulan (15 orang setiap kumpulan), iaitu kumpulan kawalan dan rawatan. Guru bahasa Inggeris menilai murid-murid berdasarkan tiga aspek tersebut menggunakan kaedah pentaksiran berasaskan rubrik, dengan nilai Cronbach's Alpha adalah 0.932, iaitu nilai yang boleh dipercayai. Kajian ini membandingkan kaedah pengajaran konvensional dengan NLP. Dengan  $\alpha = 0.10$ , analisis varians multivariat (MANOVA) menilai keberkesanan kaedah pengajaran. Gabungan pembolehubah bersandar berbeza secara signifikan berdasarkan kaedah pengajaran, yang mana Pillai Trace = 0.95,  $F(24, 5) = 3.72$ ,  $p < 0.074$ , separa  $\eta^2 = 0.95$ . Dengan  $\alpha = 0.05$ , ujian-t berpasangan dijalankan untuk menentukan sama ada perbezaan dalam motivasi, keyakinan, dan prestasi antara dua kumpulan adalah signifikan secara statistik. Bagi aspek motivasi, keyakinan dan prestasi, perbezaan min adalah signifikan untuk kumpulan rawatan, nilai- $p < 0.05$  tetapi tidak signifikan untuk kaedah kumpulan kawalan, nilai- $p > 0.05$ . Kajian ini menunjukkan bahawa integrasi alat NLP dalam pengajaran sebutan bahasa Inggeris dengan ketara meningkatkan motivasi, keyakinan, dan prestasi murid berbanding dengan kaedah pengajaran konvensional. Penggunaan alat NLP dapat memperkukuhkan pembelajaran sendiri dalam pembelajaran sebutan bahasa Inggeris.



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## LIST OF ABBREVIATIONS

AI	Artificial Intelligence
CLT	Communication Language Teaching
DSKP	Standards- Based Curriculum and Assessment Document
ELSA	English Language Speech Assistant
L2	Second Language
MANOVA	Multivariate analysis of variance
MOE	Ministry of Education
NLP	Natural Language Processing
PPD	Pasir Gudang District Education Office
RCT	Randomized Controlled Trials
SCT	Social Cognitive Theory
SDT	Self Determination Theory
SPSS	Statistical Package for the Social Science
UPSI	Sultan Idris Education University





## APPENDIX LIST

- A The Comparison Between Pronunciation Tools
- B The Words/ Sentences Student Learnt
- C The Validation Form
- D Approval Forms





## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction



Malaysia is a multiracial country, as many ethnic groups in Malaysia maintain separate cultural identities (Abdullah et al., 2021). The major ethnicities of Malaysia are Malays, Chinese, Indians, and Indigenous. It is not surprising that Malaysia is also a multilingual country, as every ethnicity speaks their native language as their first language. Nearly everything is interconnected in this nation because of the multicultural society it has, which is made up of diverse races, faiths, and ethnic groups with various first languages, dialects, and traditions (Aina et al., 2022).

Language plays the main role in our daily lives. Language is very essential, as it means expressing our opinions. It lets us convey ourselves to others, influence our





world, and name the things around us. It also allows us to internally create our ideas; it can speak for our ideas and allow us to change them. It lets us design and shape our life experiences and also be a medium for understanding and communicating with the world (McNamara et al., 2017). Without language, humans can hardly communicate with each other.

There are 6500 languages around the world. According to the United Nations, there are six official languages in the world: Arabic, Chinese, English, French, Russian, and Spanish. There are about 1132 million speakers of the English language all around the world. Originally, English was spoken by West Germanic people. It originated in England and is now the dominant language of the United States, the United Kingdom, Canada, Australia, Ireland, New Zealand, and various island nations in the Caribbean Sea and the Pacific Ocean. It is also the official language of India, the Philippines, Singapore, and many countries in sub-Saharan Africa, including South Africa. Good pronunciation is vital to language learning. Every language that is used around the world reflects the distinctive culture of its speakers. Losing a language resembles losing a culture (Ong, 2020).

Pronunciation is an important component because it is how we say words. Most people speak the dialect of Standard English with an accent that belongs to the part of the country they come from or live in. For example, Malaysians speak British English with the slang of Malaysian. Wrong pronunciation can make the listeners confuse and misinterpret the meaning of the sentences. Learners with good intonations, such as those who do not make unneeded stops and pauses, provide clear pronunciation, and speak English with ease, are categorised as fluent speakers (Reswari, 2018).





Demotivation can result from a variety of factors, such as when a second language learner tries to communicate with a native speaker and discovers they do not understand them or when a student learns they have been pronouncing a word incorrectly all along (Phomprasert, 2020).

One of the major and compulsory subjects in the Malaysian education system is language learning. Formal education in Malaysia starts at the age of four, which is pre-schooling, but the majority of children enter preschool at the age of six or below as preparation to enter the school system. At the age of seven, it is an obligation that every child should start primary education. Primary education usually takes six years, which is from the age of seven to the age of twelve. Besides reading, writing, and counting, they will be exposed to other subjects such as science, physical education, and Islamic and moral education. At the end of their studies in Year 6, they will face the Primary School Evaluation Test until last year. This will evaluate the level of comprehension, writing, and verbal skills in Bahasa Malaysia and English, as well as the mastery of mathematical skills and science concepts. Primary school education focuses on language learning. The national school focuses on teaching two languages, which are our national language, Bahasa Malaysia, and English as a second language. The national-type school focuses on teaching three languages: our national language, Bahasa Malaysia, English as a second language, and the native languages, such as Tamil and Chinese. All types of primary schools emphasise English language learning. Language learning in primary school is very important, as language is the medium for communication.





Mostly, primary school teachers use the conventional method of teaching English language learning. The conventional education method is also known as the conventional education method. This is called an old-fashioned way of teaching, which always focuses on one-way teaching. For example, pupils will just sit silently in the class while the teacher teaches, and pupils will just take a turn and recite from the textbook. Pupils are always expected to study and memorise all the lessons. Most of the time, the class will be dominated by the teacher and instructor. Teachers rely on the objectives set in the textbook. The tools and materials used by teachers are textbooks, whiteboards, and exercise books. Conventional teaching is evaluated with a written exam-based evaluation with standard answers. This type of teaching is less effective because it is hard to keep the learner's interest in the class. This method is also less helpful in developing critical thinking and problem-solving skills. According to Sirat et al. (2021), typically kindergarten and primary school teachers employ traditional books or flash-based e-learning materials. However, this approach lacks interactive components that would encourage the children's psychomotor development. Importantly, this method assumes all the learners are capable of understanding in the same interpersonal way. Innovative pedagogies used in teaching and learning practices improved learning results better than the conventional teaching approach (Zhang et al., 2020). The best way to make it more fun is to use modern teaching methods.

The modern teaching method is also known as the innovative teaching method. This method does not assume all the pupils are at the same level of understanding and focuses more on individual pupil's needs. This method of teaching is activity-based, using question, demonstration, explanation, and collaboration techniques. The modern teaching method focuses on the training of creativity. Innovative pedagogy is viewed





as a proactive strategy for more inventively integrating instructional tactics and methodologies into classroom learning. The main goal is to make sure that students actively pursue their learning goals and take full responsibility for their education. The instructor also serves as a facilitator to accomplish the stated learning objectives (Zhang et al., 2020). Teaching materials and tools can be diversified. The teaching evaluation can be diversified, and alternative answers should be accepted. The modern method is spaced learning, where pupils are encouraged to quickly switch through activities. Pupils can create connections that they remember with this technique. English language learning will be so much fun and interesting when modern teaching methods are used in the classroom, especially for young children. Innovative pedagogy boosts students' engagement, motivation, and critical thinking, providing them with a reason to stay in school and finish their academic training (Santosa et al., 2019). Teachers should use technological tools such as NLP tools as material to teach English language learning.



Motivation is the process that initiates, guides and maintains goal-oriented behaviours. Motivation is an internal drive that encourages people to engage in activities such as reading or writing to accomplish their learning objectives (Surastina & Dedi, 2018). Motivation can be divided into two types: intrinsic and extrinsic motivation. Extrinsic or intrinsic motives can motivate people to study, according to this taxonomy. Learners who study for extrinsic reasons do so to obtain incentives (such as passing an exam) or avoid punishment (e.g., scoring poorly on a test). Intrinsically motivated pupils, on the other hand, are motivated to study by the pleasure they derive from the act of learning (Wallace & Leong, 2020). Motivation involves the biological, emotional, social, and cognitive forces that activate behaviour. In everyday usage, the





term "motivation" is frequently used to describe why a person does something. It is the driving force behind human action.

Confidence is a belief in oneself, the conviction that one can meet life's challenges and succeed, and the willingness to act accordingly. Self-confidence is defined as a personal assessment of merit exhibited in people's attitudes toward themselves (Saito & Heo, 2021). One of the most important things that affects learning is self-confidence. It is one of the primary human drives and can have a big impact on someone's life, for better or worse. Students who have high self-esteem, for instance, are confident in their abilities and can achieve and learn a language with ease, in contrast to those who have low self-esteem, who have doubts about their skills and struggle to learn and accomplish (Derdour, 2022).



Education and technology life cannot be separated from the infusion of technology that brings swift changes in teaching approaches. Technology plays a key role in education in this globalization era. Technology is defined as the usage of scientific knowledge for applicable purposes in human life or to alter or manipulate human surroundings. The Ministry of Education (MOE) narrows the academic achievement gap between urban and rural students by providing equal benefits based on educational challenges such as educational imbalances and skills shortages, especially in rural area (Hasin & Nasir, 2021). One of the fastest-growing technologies is artificial intelligence (AI) technology area and the breakthroughs and advancements have resulted in computers, machines, and other artifacts. possessing intelligence comparable to that of humans, including cognitive capacities, learning, adaptability, and decision-making abilities. In the beginning, AI was represented by computers and





computer-related technologies. It then evolved into web-based and online intelligent education systems, and finally, with the use of embedded computer systems and other technologies, humanoid robots and web-based chatbots were used to perform the duties and functions of instructors either alone or in collaboration with instructors (Chen et al., 2020). Computer systems can give pupils personalised guidance, assistance, or feedback, as well as aid teachers or policymakers in making decisions with the aid of AI technologies, which replicate human intelligence to make inferences, judgments, or predictions (Hwang et al., 2020). AI outcomes in education's vision are excellent outcomes for pupils. It is so important for educational institutions to expose pupils to AI technologies because AI will be widely used in the future workforce, and pupils need to be ready to work in an AI environment (Marr, 2018). One of the subfields of AI technologies is natural language processing (NLP).



The collection of techniques used to enable computer access to human language is known as natural language processing. Natural language processing has permeated every aspect of our lives over the past ten years, including automatic machine translation on the internet and in social media, text classification that prevents our email inboxes from filling up with spam, search engines that are highly linguistically sophisticated beyond string matching and network analysis, and dialogue systems that are becoming more and more common and efficient for exchanging information (Eisenstein, 2019). NLP is not a new term in the AI machine-learning world. It has over 70 years of history as a branch of AI that helps computers understand, interpret, and manipulate human language. In short, NLP is used to apply machine algorithms to produce text and speech. It provides various services in the education field. NLP is capable of bringing education to another level in Malaysia. NLP can potentially





improve teaching and learning processes among primary school pupils. Saudi Arabia has proven that NLP provides a perfect solution to the various problems and barriers in the educational system, which result in affecting the academic progress and learning of the pupils (Alhawiti, 2014). NLP is a powerful tool because it can analyse the language we use to represent our opinions and ideas. In the context of learning analytics, it is a means toward the automated understanding of learning processes and the learner. NLP may provide information about people, their skills, their thoughts about the tool's content, and their social experiences (McNamara et al., 2017).

NLP plays an important role in language learning. English as second language and English as first language students frequently employ automatic speech recognition (ASR) technologies to assess or practice their English pronunciation (Liu et al., 2019).

Pronunciation of the English language with an NLP tool is the key topic of this research. In studying English, pronunciation is important. It is an important component, particularly when it comes to speaking. To be understood, speakers should use good English pronunciation when giving speeches (Monika, 2019). The target sample of the study is primary school pupils who are 9 years old. Language learning is important at an early age, as kids can adapt and learn new knowledge faster. Kids are eager to learn a foreign language, so an early start is a key point for maximizing their eagerness (Myles, 2017). At the end of the study, the results provide the motivation level, confidence level, and performance of year 3 pupils in using the NLP tool in English.





## 1.2 Research Background

Malaysia is considered to have a "high" non-native command of English. Malaysia's name is listed at 24th rank with a 574 score, which is above India, Taiwan, Thailand, Mexico, Vietnam, Japan, Pakistan, Indonesia, and Nepal, which were rated "low" out of 100 countries or regions. Malaysia received a high English Language Proficiency Band this year (the world's largest ranking of countries and regions by English skills, 2020). One of the languages with a global need for learners at all levels of communication is English (Aziz & Kashinathan, 2021). Non-native speakers who can understand the variation of the English language, read hard text comfortably, and communicate smoothly with a native speaker are ranked as having "very high" proficiency, while those who can read and understand an English-language newspaper, show in the language, and provide a work presentation in English are ranked as having "high" proficiency.

According to Ahmad (2019), over 1.121 billion speakers speak English, and 743 million are non-native speakers in 2019. Internet sources and technical and scientific periodicals are mostly in English. Speaking and learning English is a debatable topic in Malaysia, and there have been many debates conducted in a binary manner. Malaysians realised the significance of English in their daily lives. The diversity in Malaysian schools makes it more challenging to implement standard English language policies. Speaking is a beneficial language skill that enables speakers and listeners to interact orally for information transfer, connection building, and sharing (Aziz & Kashinathan, 2021). There are two types of primary schools in Malaysia: Malay Medium National Schools (SK) and non-Malay Medium National-type Schools (SJK). The





implementation of policies should be fair for both school pupils. In the year 2016, the Dual-Language Programme (DLP) which is teaching Mathematics and Science in either Malay language or English language was implemented. DLP was implemented to encourage schools that are capable of conducting Mathematics and Science in English. Some schools such as rural schools failed to achieve good proportions owing to a lack of fluency among teachers and learners (Azizi, 2019).

The problems in learning English among non-native speakers are not only in Malaysia; they are a worldwide problem. It is unavoidable, although many Malaysians realise it and make an effort to improve their English proficiency. Non-native learners face linguistic problems and non-linguistic problems when learning the English language. Linguistic problems are problems that arise from components of the language learned while learning English, such as grammar, vocabulary, and pronunciation. Non-linguistic problems arise from the surroundings of the learner, such as pupils, teachers, methods, material, motivation, and confidence. This research focused on pronunciation, methods, motivation, and confidence. speakers

The Malaysian Education Ministry (MOE) was also concerned and never failed to play its role in English language improvisation. One of the strategies taken by MOE was the establishment of the English Language Teaching Centre (ELTC) on May 2, 2002. ELTC continues to strengthen and support the aspirations of the government to enhance, build, develop, and sustain the quality of English language education. The English language can be entitled communication" as an "operating system" for global communication, and it plays vital roles in the fields of business, information technology, science, entertainment, and politics (Azizi, 2019).





AI is being used in various ways all around us. The use of AI in real-world applications has changed human's way of living globally. AI has been widely used in various domains, such as chatbots, voice recognition, self-driving cars, online shopping, streaming services, healthcare technologies, factory and warehouse systems, educational tools, and many more. There is a survey conducted to collect findings that show public views about science-related issues and the role of science in Malaysian society. Public views on AI and using robots to automate jobs are more varied from public to public. A median of 53% say the development of AI, or computer systems designed to imitate human behaviours, has mostly been a good thing for society, while 33% say it has been a bad thing. Views of AI are generally positive among the Asian public (66%), surveyed: About two-thirds or more in Singapore (72%), South Korea (69%), India (67%), Taiwan (66%), and Japan (65%) say AI has been a good thing for society. Many places in Asia have emerged as world leaders in AI. Specifically, 53% of Malaysians have positive views on AI, while 44% of Malaysians feel AI is a bad thing for society (Public Views about Science in Malaysia, 2020). According to a survey conducted by Randstad about work monitors, 76% are proactively learning about AI themselves to ensure their employability.

NLP tools not only help in improving English but also provide a fun learning environment to the pupils. NLP tools have features that help with education such as text correction, language translation, smart assistants, search results and speech recognition. Various NLP tools have these features which help example, with education and language learning such as iStart, Massive Open Online Courses (MOOC), Autotutor and Readerbench. Certain tools highly helped in enhancing English language learning





for example Wikspeak, Lingoos, WorldWeb, and The Sage. But most of them do not give feedback to the pupils about the task they completed.

The independent variable is the teaching method of English pronunciation for Year 3 pupils. There are two types of teaching methods used which are conventional teaching methods and teaching using NLP. The dependent variables of the research are Motivation, Confidence and Performance in learning English pronunciation in primary school. The research focuses on the use of NLP tools to motivate primary school pupils to learn English pronunciation as compared to the conventional method of teaching. Secondly, the research focuses on the use of the NLP tool to improve the confidence of primary school pupils in learning English pronunciation as compared to the conventional method of teaching. Thirdly, the research investigates the performance of primary school pupils in English pronunciation learning with and without the use of the NLP Tool methods

The research was conducted on primary school standard 3 English learning pupils. According to Zhou (2020), infants have greater linguistic sensitivity than adults do, and they also have greater language learning capacity. As a result, it has been proposed that learning a foreign language is best done before adolescence. Primary 3 pupils are not too young to follow instructions and not too old to make a decision. Besides, they are not too young to learn pronunciation by using digitalised devices.





### 1.3 Problem Statement

Firstly, the fusion of ethnicity, religion, and language in the idea of "Malayness" is the main reason the Malays and Malaysian constitutions avoid learning English (Nor et al., 2019). Despite being English students, most students do not use English in their daily interactions. Only in the classroom do students speak English, and rarely do they do so outside. A teacher needs to come up with a way to help children who are having trouble learning how to speak English (Fajriah, 2022).

Secondly, teachers usually face difficulties in teaching pronunciation to the students. The preliminary survey of three classrooms in a high school, as well as interviews with two English language teachers, showed that there was a lack of concentration on teaching and practicing English pronunciation. Most of the teaching and learning time was devoted to lessons and projects that helped pupils improve their scores on their English language exams, and grammar was restricted to "by-the-way" slots because it was not a core component of the test (Jayapalan & Pillai, 2016). According to Amoah and Yeboah (2021), to increase the speaking confidence of EFL learners, instructors or teachers should establish a supportive environment that will help to lessen shyness or anxiety and gather the necessary tools, such as routine oral presentations or classroom discussions. Teachers should use digital tools and software in the learning process, such as NLP tools, to attract pupil's attention (Sa-ih, 2017). Students must first develop the demand for independent work, free, creative activity, and, most crucially, independent thinking if they are to obtain independent knowledge. The use of interactive methods and cutting-edge technologies in the educational process is gaining popularity, in part because traditional students have traditionally only been





taught to acquire ready-made knowledge, whereas modern technology teaches them to independently search for, analyse, and draw their own especially those conclusions from their knowledge (Rahberdi & Yusupovich, 2022). Few digitalization technologies are used in English pronunciation lessons especially involving NLP tools as a solution. Many teachers, learners, and researchers are not aware of the existing NLP tools, which are helpful in education.

Thirdly, lack of motivation in learning English pronunciation is the major problem in learning proper pronunciation. According to Amoah & Yeboah (2021), speaking issues among EFL students are more closely related to psychological issues like anxiety, fear of making mistakes, unwillingness, and fear of receiving a poor grade than they are to linguistic issues like a lack of vocabulary, poor pronunciation, inadequate knowledge of grammar rules, reading, and oral presentation. To study a second language successfully or unsuccessfully, motivation is vital. Moreover, Monika et al. (2019), discovered numerous difficulties in learning how to pronounce English words, a lack of interest in the pronunciation learning process, and low motivation to practice. English teachers must create a method for teaching English pronunciation classes based on the backgrounds and traits of their pupils, especially those who are EFL learners.

Fourthly, the confidence level of speaking English in public is one of the major problems among Malaysians. Many Malaysians are shy and feel embarrassed to speak English in public. This is because most Malaysians have not practiced and trained to speak with good pronunciation since they were young. They should be encouraged, but not humiliated, through their active cooperation in classroom activities. They should





feel that they study the genuine language (Sa-ih , 2017). While students who are motivated and confident like learning new things and improving their English. Because of this, despite any obstacles they face, they will finally succeed (Derdour et al., 2022).

Fifthly, most researchers focus on evaluating and testing the functionality and usability of NLP tools. However, little research was conducted to evaluate the effectiveness of the NLP tools in improving English pronunciation. Research has been conducted previously on comparing the pronunciation scores obtained by a native speaker reading some test sentences to scores obtained from text-to-speech (TTS) audio on the same sentences. The approach's utility is demonstrated by using the English Language Speech Assistant (ELSA) (Proença et al., 2019). Some research focuses on NLP tools helping in education, but there are only a few focusing on the use of NLP in English pronunciation.



In conclusion, there are various problems and gaps, especially in education and NLP. From this research, the problems and gaps are highlighted and this is provided with some solutions. Pupils face a few problems with English pronunciation. The problem has affected the confidence level and motivation for learning English. The research focuses on the use of NLP tools to improve the motivation, confidence, and performance of primary school pupils in English pronunciation. Besides, the research focuses on the effectiveness of NLP in improving the English pronunciation of primary school pupils.





## 1.4 Objective of the Study

The objectives of the research are shown below:

- i. To evaluate the primary school pupils who learn English language pronunciation using different teaching methods have significant mean vector differences in motivation, confidence and performance.
- ii. To analyse the effectiveness of NLP Tool usage on motivation in English language pronunciation learning among primary school pupils.
- iii. To study the effectiveness of NLP Tool usage on confidence in English language pronunciation learning among primary school pupils.
- iv. To examine the effectiveness of NLP Tool usage on performance in English language pronunciation learning among primary school pupils.



## 1.5 Research Question

The research questions are shown below:

- i. Do the primary school pupils who learn English language pronunciation using different teaching methods have significant mean vector differences in motivation, confidence and performance?





- ii. Does the motivation level of English language pronunciation learning among primary school pupils increase when using the NLP Tool as compared to the conventional method of teaching?
- iii. Does the confidence level of English language pronunciation learning among primary school pupils increase when using the NLP Tool as compared to the conventional method of teaching?
- iv. Does the performance level of English language pronunciation learning among primary school pupils increase when using the NLP tool as compared to the conventional method of teaching?



## 1.6 Research Hypothesis

The research hypothesis for all research questions are as below:

- i. For first research hypothesis:

Ho: The primary school pupils who learn English language pronunciation using different teaching methods does not have significant mean vector differences in motivation, confidence and performance.





ii. For second research hypothesis:

H<sub>0</sub>: The use of the NLP tools does not affect the motivation level of primary school pupils in English pronunciation as compared to the conventional method of teaching.

iii. For third research hypothesis:

H<sub>0</sub>: The use of the NLP tools does not affect the confidence level of primary school pupils in English pronunciation as compared to the conventional method of teaching.

iv. For fourth research hypothesis:

H<sub>0</sub>: The use of the NLP tools does not affect the performance level of primary school pupils in English pronunciation as compared to the conventional method of teaching

## 1.7 Conceptual Framework

The independent variable is the teaching method of English pronunciation for Year 3 pupils. There are two types of teaching methods used: conventional teaching methods and teaching using NLP tool methods. The dependent variables of motivation of the research are motivation, confidence, and performance. The dependent variable variable of motivation guided by Self-Determination Theory (SDT). The macro-level theory of human motivation known as SDT, tries to explain the dynamics of human need, motivation, and well-being (Ryan, 1985) in a social setting (Deci and Ryan, 1985). SDT





consists of three subcomponents, which are autonomy, competence, and relatedness. The dependent variable of confidence is guided by Social Cognitive Theory (SCT). According to Devi et al. (2016), when a student or teacher attempts to imitate an observed behavior using social cognitive theory, their self-efficacy gives them the confidence to do so. SCT consists of two subcomponents, which are self-efficacy and observational learning. The dependent variable of performance is guided by Communicative Language Teaching (CLT). According to Dos Santos (2020), the goal of the CLT method is to assist students in mastering the target language's communication abilities. As CLT emphasises the real-world application of language abilities in communicative situations, it can improve pronunciation. Pronunciation skills can be improved by assigning pupils relevant language activities. NLP technologies are capable of analysing spoken language and determining pronunciation, intonation, and fluency. This provides information on learners' spoken language proficiency, which upholds the CLT principle that values communicative fluency.

The proposed relationship between NLP Tool and motivation is the NLP tool's potential to provide more learner-centered and engaging activities, as well as its ability to support the autonomy, competence, and relatedness needs emphasised in SDT, which may have a good impact on motivation. While for NLP Tool and confidence are through active participation, modeling, and feedback, the NLP tool, which places a strong emphasis on learner engagement, communication, and interaction, may boost confidence, hence fostering self-efficacy beliefs. In the context of CLT, performance levels relate to how well students are able to communicate in the target language. This involves their capacity for understanding, communication, and productive interaction in real-world settings and NLP tools support the CLT's emphasis on dynamic





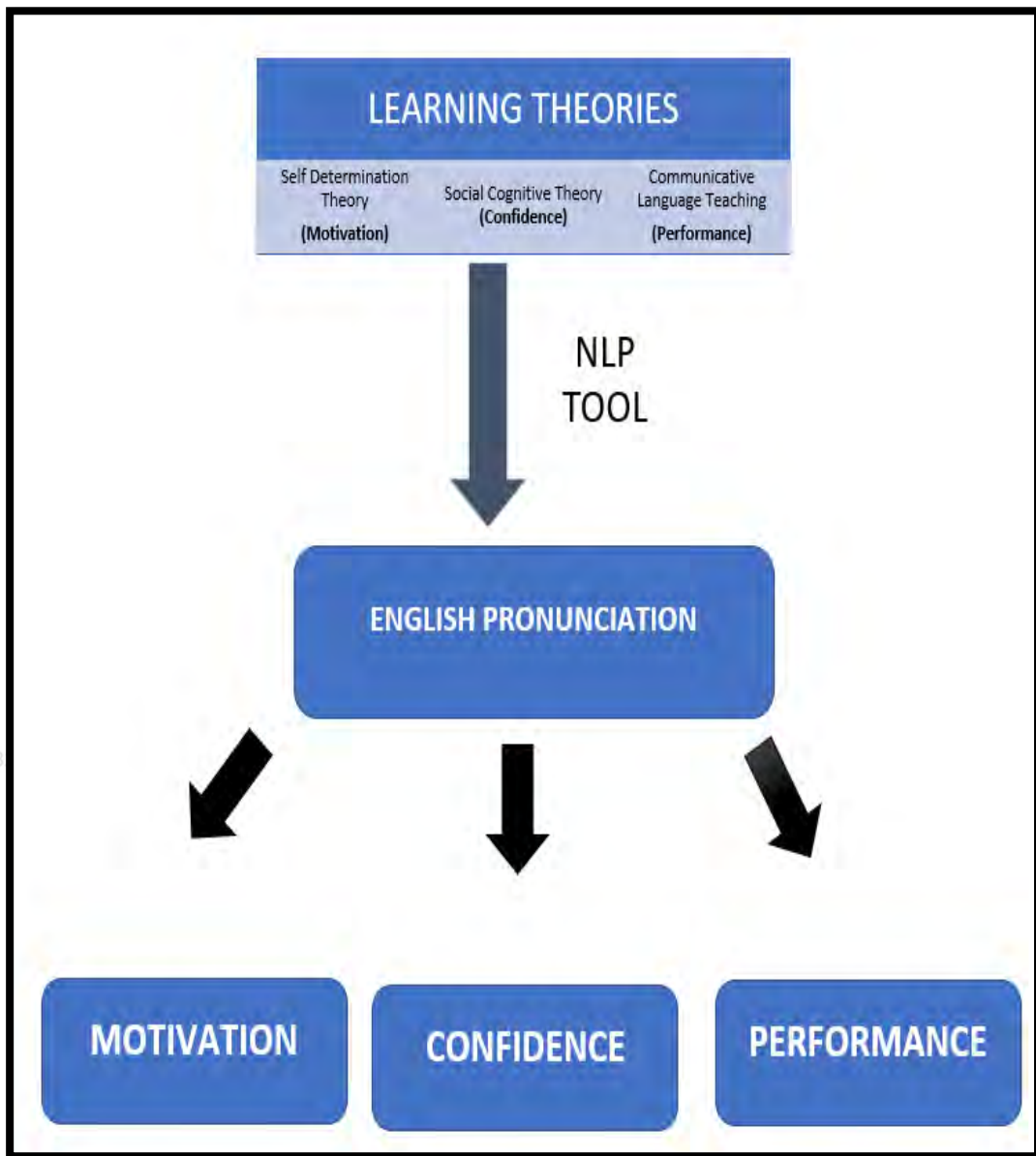
communication by offering immediate feedback on a range of language-related topics, including vocabulary usage, grammar, and pronunciation. Moreover, for motivation and performance, performance is predicted to benefit from motivation as it is conceptualised by SDT. The likelihood of learners being more engaged, persistent, and driven to perform well increases when they feel a feeling of autonomy, demonstrate competence, and have strong social ties. For confidence and performance, It is believed that self-efficacy beliefs and observational learning, which drive confidence, will positively influence performance. Learners are more willing to put their talents to use, take chances, and achieve better when they are confident in their abilities.

In conclusion, this conceptual framework suggests that teaching methods, such as the conventional method and NLP tool, can influence motivation, confidence, and subsequently impact learner performance. By incorporating Self-Determination Theory, Social Cognitive Theory and Communicative Language Teaching, the framework highlights the importance of autonomy, competence, relatedness, self-efficacy, and observational learning in understanding the relationship between teaching methods, motivation, confidence, and performance in language learning.



**Figure 1.1**

*The conceptual framework*





## 1.8 Operational Definition

**Table 1.1**

*Operational Definition*

No	Variable	Definition
1	Natural Language Processing(NLP)	Natural Language Processing (NLP) is a field of artificial intelligence that used to assess pupil English pronunciation. English pronunciation tool that use NLP technology used to aid English pronunciation learning.
2	Confidence	Confidence is the belief in one's ability to accomplish tasks successfully. Those with confidence doesn't feel tense, discomfort and fear of failure. Confidence is one of the dependent variable that measured using the evaluation rubric. Pupil will rate their current level of confidence on a scale from 1 (poorly confident) to 4 (strongly confident), with higher scores indicating higher confidence level.
3	Motivation	Motivation is one of the dependent variable that measured using the evaluation rubric. Pupil will rate their current level of motivation on a scale from 1 (poorly motivated) to 4 (strongly motivated), with higher scores indicating higher motivation level.





No	Variable	Definition
4	Performance	Performance is one of the dependent variable that measured using the evaluation rubric. Pupil will rate their current level of confidence on a scale from 1 (poor) to 4 (excellent), with higher scores indicating higher performance level.
5	English Language Speech Assistant (ELSA)	ELSA Speak app is used as NLP Tool which helps in teaching English pronunciation among year 3 pupil.
6	Primary 3 Pupil	Primary school pupils are who is aged 9 years old pursuing primary education in Malaysia primary school.
7	Conventional teaching method	Teaching method that does not use any technological tool as teaching material, uses only papers and books as teaching material.



## 1.9 Importance of Research

This research contributes to individuals, parents, teachers, schools, communities and the country. This kind of research is important because the research topic is related to education and it helps to improve education in Malaysia. The key topic is the application of the NLP tool to English language learning among primary school pupils.

The first step of this research is to identify problems faced by pupils in language learning. Each individual either as a language learner or reader can get to know the





major problems in English language learning. Pupils can improve their learning skills by knowing the common problems in English language learning.

Teachers also benefit from this research as they will be aware of the problems faced by pupils. It helps the teachers to create a lesson plan and material for teaching. They can consider the problems stated in the research before planning the teaching method in the classroom. Speaking curriculum should be carefully crafted, and educators should create technology- and social media-integrated English-speaking curricula that encourage students to broaden their horizons in terms of culture, knowledge, and experience (Wahyuningsih & Afandi, 2020). The ability to identify issues, provide the ideal learning settings for the pupils, and motivate them to learn are characteristics of a good teacher (Ubaydullayeva , 2022).



Moreover, the improvisation of English proficiency levels among primary school pupils is very important as English is the global language. Acquiring English at an early age is good. How pronunciation is taught and learned, as well as how it is measured, are both critical elements that must be carefully considered by those interested in curriculum formation, content processing, evaluation, and teacher preparation, among others, in parallel and not in isolation (Jayapalan & Pillai, 2016). Language learning with a modern method such as using the NLP Tool helps to develop the critical and problem-solving skills of the learner. This increases the confidence and motivation of pupils to speak in English in public. As they grow up, they will not fear expressing themselves in the English language to society. They will never have anxiety as since young they have practiced speaking in English with the help NLP tool. This helps to develop a healthy society and country indirectly.





## 1.10 Summary

This chapter included the introduction and research background. Other than that, this chapter explains the problem statement. Research objectives, questions and hypotheses are stated in this chapter. The next section is the conceptual framework which explains the relationship between the variables. The next section is operational definition which is to define certain words. The importance of the research is also explained in the last section.

