

A CONCEPTUAL FRAMEWORK OF ENGLISH ORAL TOOLKIT (EOT) WITH INTELLIGENT VOICE RECOGNITION

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ABSTRAK

Kertas kerja ini akan membincangkan mengenai pembangunan English Oral Toolkit (EOT) dengan Sistem Pintar Pengecaman Suara. Selain itu kertas ini akan menerangkan mengenai metodologi kajian termasuk pembangunan Kit EOT ini untuk proses pengajaran dan pembelajaran, keberkesanan Kit ini kepada proses pengajaran dan pembelajaran, dan penggunaan ICT dalam pendidikan di persekitaran pintar. Fasa-fasa dalam Modal Addie telah digunakan untuk membina Kit ini termasuk keperluan analisis, reka bentuk dan pembangunan, pelaksanaan dan fasa Penilaian. Objektif kajian ini adalah untuk menguji keupayaan untuk membangunkan sebuah Kit pendidikan seperti English Oral Toolkit terutamanya dengan sistem pengenalan suara pintar untuk kanak-kanak.

Kata kunci *Sistem Pengecaman Suara Pintar, persekitaran pintar, Modal Addie*

ABSTRACT

This paper will discover about the development of English Oral Toolkit (EOT) with Intelligent Voice Recognition system. Moreover this paper will explain about the research methodology that include the development of this EOT toolkit for teaching and learning process, effectiveness of this toolkit on teaching and learning process, and the use of ICT in education on smart environments. Addie Model has been used to construct this toolkit which includes analysis requirements, design and development, Implementation and Evaluation phases. The objective of this research is to test the capability to develop an educational toolkit like English Oral Toolkit especially with the intelligent voice recognition for early age children.

Keywords *Intelligent Voice Recognition system, smart environments, Addie Model*

INTRODUCTION

This paper will explain about the development of EOT for early age's children. EOT toolkit can be used by teachers to aid their teaching and learning process and also by parents to educate their children at home. This toolkit will help early age children to learn and pronounce simple words with correct pronunciation. Besides that, this kind of toolkit will motivate and will fascinate children to learn new language at early age. The main objectives of this research are to investigate current practice of teaching and learning process for early age children. And also to test the capability to develop an educational toolkit like English Oral Toolkit especially with the intelligent voice recognition.

Lack of toolkit with voice recognition system to identify the correctness of words pronunciations and grammar is the main reasons to select this approach. It will help children to pronounce daily used words correctly and grammatically without error. Children can use this EOT toolkit to practice good and proper English at early age. In today's global world, English is the most common language spoken internationally and plays an important role in

our daily life. The importance of English in education and student's life is more crucial because its remains as a major medium of instruction in schools is the main reason to select this particular language. In today's global world, English is the most common language spoken internationally and plays an important role in our daily life. The importance of English in education and student's life is more crucial because its remains as a major medium of instruction in schools [1]. Everyone especially young generation must utilise fully this language because English is a medium to present their ideas and to relate the contents of their minds to one another [1].

By using the ICT in teaching and learning, it can enhance on conquering ICT in people especially in younger generations also called as Y generations. Members of Generation Y are often referred to as "echo boomers" because they are the children of parents born during the baby boom (the "baby boomers"). Because children born during this time period have had constant access to technology such as computers, cell phones and mobiles and also updated with forms of technology [2]. Uses of this kind of toolkits in today's smart environments will make children learn new things in a fun-filled environment. This English Oral toolkit is an interactive toolkit with high voice recognition technology mainly aims to the early age children age ranges from 3 to 6 years. Hence, this is the time wherein sufficient amount of stimuli should be made available to a child [3]. If a child is unable to experience a linguistically rich environment during these critical periods, he or she might not be able to gain full command of a particular language especially the grammatical system [4]. This kind of toolkit seems to be very few in our country compared to the foreign country where at foreign they often use this kind of interactive toolkit in their education systems to enhance more their language proficiency.

PROBLEM STATEMENT

English Oral toolkit is developed to aid teaching and learning process for early age children. As we know there is a lot of applications and toolkit available in market for teaching grammar and vocabulary. But this kind of oral toolkit especially toolkits that emphasize speaking English correctly especially with the intelligent voice recognition is very few in market will be the major factor and main reason behind the development of this toolkit. This toolkit can be used as a teaching and learning tool for early age children's to improve their communication skills as we know improved spoken English in children is a must for the betterment of each and every aspect of their life.

Conventional study is less attractive and interactive; it will make children feels boring easily, besides it is old style of study. They will not get any feel while using conventional study, they just can read, and memorize but with the function of intelligent voice recognition children are able to know the correct pronunciations of the word they read. Besides that, fun-filled learning environment can be created as well as. Personal experience using this kind of toolkit is more exciting and convincing than using toolkit which is more static. Favourable designed learning environments would enhance the learning effectiveness [5]. Generally, technology helps in making teaching and learning become more fun, learning competing and full of information [6].

RESEARCH OBJECTIVES

On the strength of literature review and preliminary analysis that have been carried out, few objectives has been set for this research. Objective of this research is to develop an interactive English Oral toolkit for early age children to improve their communication skills especially in English language. Language teaching practice has seen the emergence of various diverse—and in some respects divergent—threads in the last three or four decades, and it is by no means easy to design a coherent course for teachers which encompasses differing ways of analysing the language to be learned, differing views of the language learning process, differing ideas on language skills, and so on [7].

The first few years of human life after his or her birth are the most crucial time for language acquisition. Neurobiologist Dr. Lise Eliot writes: *“First two year of life focus is typically on motor skills, in the third year attention shifts to language development where brain organizes the connections for language when the child sees pictures in a book and hears the names for the pictures and also children can understand what has been said by people around them and able to react toward it”* [8]. The last objective for this research is to test the capability to develop an educational toolkit like English Oral Toolkit especially with the intelligent voice recognition.

Research Significant

This EOT will be a teaching and learning tool for early age’s children age range 3 to 6 years. Preschool teachers and parents can use this tool to educate and to motivate their children to use better English in their daily life conversation. When we wish to improve communication skills in children, we forget the most important element that can definitely have a big impact on your child's communication skills. Language plays a major role when it comes to brushing your communication skills.

This kind of English oral toolkit with intelligent voice recognition to check the level of correctness of words pronounced is essential in today’s education system. Spoken English is very different from written English, as in written English you at least have the chances of rectifying an error, but when it comes to spoken English what you speak is final and there is no chance for rectification [9]. Spoken English has always been considered a key element of success. So it is very important to use this kind of toolkit to emphasize and improve children communication skills this is because today’s children tomorrow’s leader.

Theoretical Framework

The theoretical framework of this study is based on Social Development Theory (Lev Vygotsky). Learning is a process of gaining knowledge or skill by studying, practicing, being taught, or experiencing the knowledge gained from learning. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition. Vygotsky (1978) states: *“Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals.”*

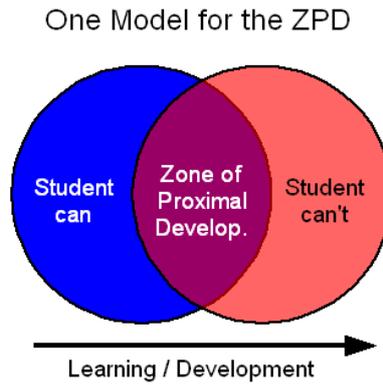


Figure 1 shows the flow of the social development theory

A second aspect of Vygotsky's theory is the idea that the potential for cognitive development depends upon the "zone of proximal development" (ZPD): a level of development attained when children engage in social behaviour. Vygotsky's theory was an attempt to explain consciousness as the end product of socialization. For examples, in the learning of language, our first utterances with peers or adults are for the purpose of communication but once mastered they become internalized and allow "inner speech". Vygotsky introduced the term zone of proximal development to describe tasks that are too difficult for the child to master alone.

RESULTS ND DISCUSSIONS

Functional testing has been conducted to ensure interactive English Oral toolkit with intelligent voice recognition conforms to all requirements and to make sure that it has all the required functionality that's specified within its functional requirements The developed toolkit has been tested for 25 students with examples of 10 words have been given for the testing. The toolkit gave 97% exact result and gave a correct feedback. EOT toolkit functionality has been also checked to verify whether all the buttons and icons available are functions properly.

NO	FUNCTIONS	FEEDBACK	RESULTS
1	Main interface design	Interesting, good working condition	Good
2	Animation and sounds	Very catchy and good selection of sounds	Good
3	Toolkit overall interfaces	User friendly and interactive	Good
4	Voice recognition system and word feedback mechanism	In good working condition and accurate response	Good
5	Icons and buttons functionality	Interesting and user friendly, easily understood by childrens	Good

Table 1 Shows functional testing result

Developer personally has test 20 words and found that 97% of the words tested give accurate results. EOT is able to detect the correctness of words, pronounce and are able to give a proper feedback for the wrong pronunciations. While 3% gives incorrect words because of

some technical errors. This analysis has been done to determine the level of effectiveness of EOT toolkit.

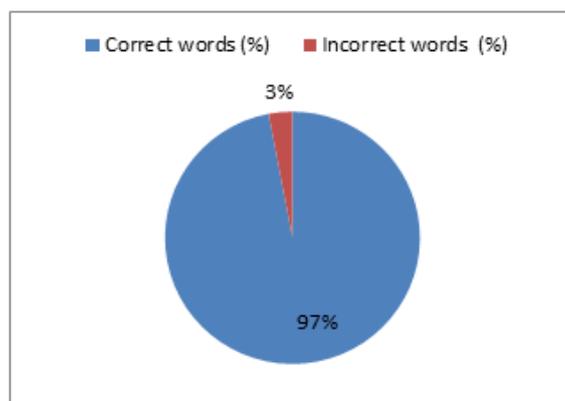


Diagram 1 shows Percentage of correct and incorrect words detect by EOT toolkit.

CONCLUSIONS

The use of this kind of toolkit is expected to achieve the objective. The maximum use of the senses in learning can give positive results in the intellectual development of children. Using this kind of toolkit will make early age children involve in active learning process without realizing they are learning. Preschool teachers and parents can use this tool to educate and to motivate their children to use better English in their daily life conversation. However, using learning toolkit alone without the active participation of students will not be able to provide an effective impact on learning performance.

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