qEEG study on Reading Quranic verse 36 „Yasin“ and Malay Language

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Abstract-

Abstract- This article reports the study on the brainwaves patterns between the activity of reading the Arabic and reading Malay text among the final year undergraduates in the university of Malaysia Sarawak. Three students volunteered for the research and their brain waves were observed and recorded to find out the difference of brainwave pattern while reading Arabic and Malay language. The observation showed a dominant production of delta followed by theta while reading Arabic and Malay language. The text used for reading were from Verse 36 (Arabic and the translated version in Malay) of the Quran. The average mean of delta wave were higher for the reading of Arabic language at the frontal lobe than while reading the Malay translation. The frequency of delta rhythm of the Arabic language differed from the Malay language due to the nature of the Arabic language. The neural circuits of the rhythm from the Arabic recitation implicates not on just the spatial visual area at the parietal lobe but also the visual eye movement at the frontal region guided by the Visual system at the Medial temporal area.

Keywords: EEG, Quran, Brain waves, QEEG.

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I. INTRODUCTION

The objective of this study is to observe the differences in the brainwaves patterns between the activity of reading the Arabic and reading Malay text among the Final Year students in Universiti Malaysia Sarwak. QEEG is used as a tool for brain mapping. QEEG is an assessment tool that aids to measure and analyses the brain functions when the subject is engaged with the cognitive process [1]. QEEG was used to record the brainwave while analysing the brain response of participant towards the language use. The Arabic language with one hundred and eighty six million native speakers is the sixth highest spoken language in the world after Mandarin, Hindi, Spanish, English and Bengali [2] In one of the previous research in Israel, Professor Zohar Eviatar, who led the research team, said: "The particular characteristics of Arabic make it difficult for the right hemisphere to be involved. When you are starting something new, there is a lot of [right hemisphere] involvement [3]. In the research, 37 students of Arabic native speakers who aspoke English and Hebrew were involved. The team measured how fast and how accurate the students were when they tried to tell words apart, separately in Arabic, in Hebrew and in English. The students used both left and right hemispheres to tell Hebrew and English words apart. Characters in English and Hebrew are easier to tell apart because there are clearer differences between them than there are in Arabic. When they looked at the students' reading of Arabic words, it was found that the Arabic-speaking adults only used their left hemispheres to tell Arabic words apart. When the Arabic readers saw simple words with their right hemispheres, they answered randomly - they could not tell them apart at all. Professor Zohor Aviatar narrated that "The right hemisphere is more sensitive to the global aspects of what it's looking at, while the left hemisphere is more sensitive to the local features” [4] . As in previous research, this research found that the right hemisphere is not that good at distinguishing small details, so readers starting to learn Arabic have to learn to focus on small details, which is not natural to them, but could help them shift to their left hemispheres. The general objective of this research is to observe the differences in the brainwaves patterns between the subject reading the Arabic book and reading Malay book. Specifically, the objectives are to i. To identify all the brainwaves pattern and brain responses during