



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT



[www.hrmars.com](http://www.hrmars.com)

ISSN: 2226-6348

## A QEEG Study on the Usage of Yellow Overlays for Reading among Autism Spectrum Disorder Children with Irlen Syndrome Symptoms

Noor Syuhada Abdul Hakim & Nurul Hanim Nasaruddin

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v11-i2/13257>

DOI:10.6007/IJARPED/v11-i2/13257

**Received:** 09 March 2022, **Revised:** 11 April 2022, **Accepted:** 27 April 2022

**Published Online:** 16 May 2022

**In-Text Citation:** (Abdul Hakim & Nasaruddin, 2022)

**To Cite this Article:** Abdul Hakim, N. S., & Nasaruddin, N. H. (2022). A Qeeg Study on the Usage of Yellow Overlays for Reading among Autism Spectrum Disorder Children with Irlen Syndrome Symptoms. *International Journal of Academic Research in Progressive Education and Development*. 11(2), 802 – 811.

**Copyright:** © 2022 The Author(s)

Published by Human Resource Management Academic Research Society ([www.hrmars.com](http://www.hrmars.com))

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licences/by/4.0/legalcode>

Vol. 11(2) 2022, Pg. 802 - 811

<http://hrmars.com/index.php/pages/detail/IJARPED>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at  
<http://hrmars.com/index.php/pages/detail/publication-ethics>



## A QEEG Study on the Usage of Yellow Overlays for Reading among Autism Spectrum Disorder Children with Irlen Syndrome Symptoms

Noor Syuhada Abdul Hakim & Nurul Hanim Nasaruddin

Faculty of Cognitive Science and Human Development, University Malaysia Sarawak (UNIMAS)

Email: Syuhada565656@Gmail.Com (Corresponding Author), Nnhanim@Unimas.My

### Abstract

This research was carried out in order to compare the difference of brainwaves with and without using yellow overlays when reading among ASD children with the symptoms of Irlen Syndrome. The population from this research consists of sixteen children with chronological ages between six to fourteen years old from Kota Samarahan and Kuching, Sarawak. Quasi-experiments one group pre-test and post-test design was applied in this research. The participants completed the reading task using yellow and without yellow overlays. Subsequently, the QEEG was used to record and analyses the electrical activity in the Region of Interest (frontal and temporal). The analysis results on the paired sample t-test indicated the significant differences for beta brainwaves at frontal  $t(15) = -2.791$ ,  $p = 0.014$ , and temporal area  $t(15) = -2.218$ ,  $p = 0.042$  while using yellow overlays. However, only the frontal area found significant differences for the alpha brainwaves when using yellow overlays  $t(15) = -2.428$ ,  $p = 0.028$ . Apparently, the results of this research show that yellow overlays can help improve reading achievements and produce extra attention when reading more than without using yellow overlays among ASD children with the Irlen Syndrome symptoms.

**Keywords:** Autism Spectrum Disorder, Irlen Syndrome, Yellow Overlays, QEEG, Brainwaves.

### Introduction

A QEEG is one of the medical imaging tools that can explain the pathophysiological nature of brain dysfunctions in persons who have ASD (Chabot et al., 2015). The advantages of QEEG are the painless, inexpensive, and easy procedure to diagnose persons with ASD (Azouz et al., 2018). In addition, this tool also can be used to identify how brain activity is linked with the person's symptoms like anxiety, depression, attention problem, learning problems, and memory problems (Zukiwski, 2019). Previous research done by Fauzan and Amran (2015) found the results from QEEG showed insufficient beta brainwaves in the majority parts of the brain regions in ASD subjects. According to Zukiwski (2021), insufficient beta waves can cause learning difficulties, brain damage, and also attention problems.