UNIVERSITI TEKNOLOGI MARA

COLOUR IDENTIFICATION FOR CHILDREN WITH AUTISM USING DISCRETE TRIAL TRAINING (DTT)

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The Colour identification for children with autism using discrete trial training (DTT)

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This thesis was prepared under the supervision of the project supervisor, Pn. Romiza Md Nor. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Science (Hons) Information Technology.

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JULY 14, 2022

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Autism spectrum disorders (ASD) is a neurological and development disorder that causes a difficulty with social communication, restricted interest and repetitive behaviour. Identifying colour can improve their social communication which also assists with language development. The aim of this project is to design and develop the colour identification mobile applications (ColorID) and to visualise their score performance. This project implements discrete trial training (DTT) technique which is a process that is done repeatedly until they can identify colours by following five principles which are antecedent, prompt, response, consequences, and inter-trial interval. Besides that, empathic design is also applied and analysed to understand autistic children by conducting observation and interviewing psychologists to understand their needs. Empathic design is analysed to gather six design guidelines for in the design of ColorID which are appearance, effectiveness, understandable, ease of use, satisfaction and efficiency. The evaluation has been conducted to content experts and teachers to measure the usefulness and satisfaction. From observation, it shows that autistic children easily identify colour with visual objects rather than texts. Autistic children with high functioning well interact with the drag and drop of the coloured object during interaction with ColorID. The score performance of colour identification activities was visualised into real-time charts. Overall, ColorID allows parents and teachers to view and monitor the performance of children in the score section provided. Users are also satisfied and agree that ColorID is useful for autism children and the essential functions of ColorID include user login, colour identification activities, database connection and performance data visualisation.