UNIVERSITI TEKNOLOGI MARA

ADAPTING META-COGNITIVE AS AN EDUCATIONAL TOOL: MAZE WITH ANIMATED PUZZLE GAME

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ABSTRACT

Meta-cognitive thinking refers to abilities that are capable of storing and manipulating information involving tasks such as reasoning, understanding and problem solving. Children with poor meta-cognitive thinking abilities will have problems in their learning process. Therefore, this project is to develop an educational tool which is 'Maze with Animated Puzzle Game'. Maze with Animated puzzle is a game that uses animation approach using Adobe Flash software. Maze puzzle game is a board game where a player must reach the end of a maze that involved a prescribed maze blocks arrangement where a player must advance from the start through the maze to the prescribed finish. This game's genre is a logical game which mainly focuses on thinking skills together with quick reflexes. This project was tested using heuristic evaluation technique which categorised: interface and interactivity; and content. Three experts in meta-cognitive study are chosen as the evaluators. The results showed that interface and interactivity of the project is 90% usable. As for the content of the project, most of the experts were satisfied with this application. Therefore, from the results of the heuristic evaluation obtained, it is proven that this maze with animated puzzle game is able to support meta-cognitive activities for current education in Malaysia.

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INTRODUCTION

1.0 Introduction

In today's era of fast data to face global competition in the world, thinking skills is viewed as a very important component skill (Adawati, 2014). The utilization of the mind to make splendid thoughts, make decisions and comprehend problems are the characteristics of thinking skills (Ministry of Education, 2012). Meanwhile, more than 10 years the program teaching high order thinking skill (HOTS) has been implemented formally in schools in Malaysia and the program begins to get place in the school curriculum (Sukiman Saad, 2013).

However, we confront numerous issues in the usage HOTS in learning and teaching since it is just brought restricted accomplishment until now (Ministry of Education, 2013). The National Average Grade (GPN) in 2013 has reported that the overall performance of UPSR candidates in 2014 has decreased by 0.02. In the meantime, through the Blueprint for making Malaysia an international level in education, various efforts and transformation have been undertaken in the field of education in order to improve higher order thinking skills (Ministry of Education, 2013).

Malaysia's result in the Programmed for International Students Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) that has decreased from 2007 to 2012 is the reasons which prompted the production of this plan. The format of the question is one of the factors that contributed to Malaysia's achievement. The format for the PISA questions are in the form of long content and the students have to make an interpretation while format for the Malaysian public examination questions, the students just have to focused in figures and tables (Ministry of Education,2012).