DIGITIZING WAYANG KULIT USING CORE ELEMENTS FOR EDUCATION

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ABSTRAK (BAHASA MALAYSIA)

Penyelidikan ini bertujuan untuk membangunkan prototaip wayang kulit digital yang menggambarkan bagaimana pendekatan multimedia boleh digunakan untuk meningkatkan pengajaran dan pembelajaran mata pelajaran Sains di sekolah rendah serta mengekalkan warisan budaya iaitu wayang kulit dalam kalangan generasi muda. Penyelidikan ini dijalankan bagi menyelesaikan masalah dalam kaedah pembelajaran Sains yang kurang berkesan di peringkat rendah dengan menggunakan pendekatan multimedia supaya kaedah pengajaran yang lebih berasaskan pelajar dapat diamalkan berbanding kaedah yang berpusatkan guru. Selain itu, prototaip wayang kulit digital ini juga diharap dapat digunakan sebagai satu kaedah untuk mengekalkan seni warisan budaya iaitu wayang kulit agar terus hidup dan dapat dinikmati serta dihargai oleh generasi akan datang. Prototaip ini telah dibangunkan dengan menggunakan tiga metodologi pada setiap peringkat pembangunan iaitu metodologi Arrifin, metodologi Rapid Application Development (RAD) dan metodologi Laudon & Laudon. Setelah prototaip wayang kulit digital siap dibangunkan penilaian kepuasan pengguna telah dilaksanakan oleh guru dan pelajar daripada dua buah sekolah rendah. Keputusan penilaian menunjukkan bahawa prototaip wayang kulit digital mampu memberi tahap kepuasan yang tinggi kepada pengguna dari sudut kebolehgunaan dan antaramuka pengguna.

ABSTRACT (ENGLISH)

This research intends to develop a *digital wayang kulit* prototype that illustrates how multimedia approach could be used to enhance teaching and learning of Science subject in primary school as well as to preserve *wayang kulit* for younger generation. This research is carried out to tackle the problem related to ineffective teaching approach of Science subject at the primary level by using a multimedia to create a learning environment which is more student-centered instead of teacher-centered. Besides that, this *digital wayang kulit* prototype is also intended to be used as one of the way to preserve *wayang kulit* as one of the national cultural heritage so that it could continue to live and appreciated by future generation. The development of the prototype involved the use of three methods; Arrifin methodology, Rapid Application Development (RAD) methodology, and Laudon & Laudon methodology. After the prototype was developed and implemented, user satisfaction evaluation has been carried out by teachers and students from two primary schools. The results of the evaluation indicated that the *digital wayang kulit* prototype has succeeded in providing a high level of satisfaction among the users in term of usability and user interface.

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LIST OF ABBREVIATIONS

SKWMS	Sekolah Kebangsaaan Wan Mohamad Saman
SKJP	Sekolah Kebangsaan Jalan Pegawai
WK	Wayang Kulit
WKG	Wayang Kulit Gedek
DWK	Digital Wayang Kulit
KSSR	Kurikulum Standard Sekolah Rendah
UPSR	Ujian Penilaian Sekolah Rendah

CHAPTER 1

INTRODUCTION

1.1 Background

The science curriculum for Malaysian school has been designed to provide students with the knowledge and skills in science, develop thinking skills and strategies to enable them to solve problems and make decisions in everyday life (Ministry of Education Malaysia, 2003). In achieving this goal, teachers have to ensure that their teaching is effective. The effectiveness of teaching and learning process is highly dependent on the teaching approach used by the teachers. Traditional teaching approach which mostly is teacher-centered should be changed to a more modern approach which provides opportunities for students to be active learners.

Computer and information technologies should be an integral part of primary and secondary school science teaching. The core of science is about investigating, exploring, asking questions, analyzing, and thinking. According to Shari (2006), technology is uniquely able to support inquiry in ways that are largely lacking in elementary science teaching; investigations of real events with probes and investigations using highly interactive models. Multimedia technology has reform the current education system and is successfully implemented for its advantages and capabilities. In this digital age, modern tools such as multimedia can be used to improve students' understanding and appreciation of science education in school. Slack (1999) revealed that students are more motivated to learn with the multimedia tools as it allows them to work at a different pace or to tailor the multimedia according to their needs.

This research intends to develop a multimedia application that illustrates how multimedia approach could be used to enhance teaching and learning of a science subject in primary school. In pursuing this intention, the intended prototype will integrate the contents of science of Standard 1 primary school with the elements of *wayang kulit* (WK), one of a national cultural heritage. The science curriculum also seeks to inculcate noble values and love for the nation. Thus, this *digital wayang kulit* (DWK) prototype is hoped to nurture appreciation and love towards the nation's cultural heritage, such as WK, among young generation.

The contents of the thesis is for internal user only

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