KESAN PENGGUNAAN PETA KONSEP TERHADAP PENCAPAIAN SAINS PELAJAR TINGKATAN SATU

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TESIS SARJANA YANG DIKEMUKAKAN KEPADA
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Kebenaran Mengguna

Penyerahan tesis ini ialah sebagai keperluan untuk pengijazahan Sarjana Pendidikan daripada Universiti Utara Malaysia. Saya bersetuju menjadikan tesis ini sebagai bahan rujukan di perpustakaan. Saya juga bersetuju bahawa kebenaran untuk membuat salinan keseluruhan atau sebahagian daripadanya bagi tujuan akademik mestilah mendapat kebenaran daripada Dekan UUM *College of Arts and Sciences.* Sebarang bentuk penyalinan, penerbitan atau penggunaan secara keseluruhan atau sebahagian daripada tesis ini bagi tujuan komersial adalah tidak dibenarkan tanpa kebenaran bertulis daripada penyelidik. Pernyataan rujukan kepada penyelidik dan Universiti Utara Malaysia mestilah dinyatakan dalam bentuk rujukan yang terdapat dalam tesis ini.

Kebenaran untuk penyelidikan atau lain-lain kegunaan sama ada secara keseluruhan atau sebahagiannya boleh dilakukan dengan menulis kepada:

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Abstrak

Fenomena penghafalan fakta memberi impak kepada ketidakberkesanan dalam amalan pengajaran dan pembelajaran, dan telah mendapat perhatian ramai ahli psikologi pendidikan.Keadaan ini, turut menyumbang kepada berlakunya salah faham konsep dalam kalangan pelajar dalam pelbagai bidang sains termasuk sains alam sekitar. Kajian ini bertujuan untuk membandingkan pengajaran menggunakan kaedah peta konsep yang berasaskan teori konstruktivisme dengan pengajaran menggunakan kaedah tradisional (transparensi OHP) bagi tajuk 'Udara di Sekeliling Kita' dalam subjek sains tingkatan satu. Kajian ini menggunakan pendekatan secara kuantitatif dan kaulitatif. Kajian secara kuantitatif menggunakan reka bentuk kuasi eksperimen ujian pra dan pos dengan kumpulan kawalan. Dua kelas telah dipilih secara rawak daripada sebelas kelas yang terdapat di lokasi kajian. Saiz sampel adalah seramai 60 orang pelajar iaitu 30 orang pelajar dalam kumpulan eksperimen dan 30 orang pelajar dalam kumpulan kawalan.Temu bual separa struktur secara bersemuka telah digunakan untuk mengutip data kualitatif di mana seramai lapan orang responden telah dipilih secara bertujuan, iaitu empat orang daripada kumpulan eksperimen dan empat orang daripada kumpulan kawalan. Dapatan kajian menunjukkan bahawa mereka yang diajar dengan menggunakan peta konsep menunjukkan prestasi yang lebih baik berbanding pelajar yang didedahkan dengan kaedah tradisional. Hasil kajian juga menunjukkan bahawa mereka yang telah diajar dengan menggunakan peta konsep dapat membuat hubungan antara konsep dan telah menunjukkan persepsi yang positif terhadap penggunaan peta konsep untuk mempelajari topik 'Udara di Sekeliling Kita'. Kajian ini menyumbang kepada bidang pendidikan sains dalam aspek pemahaman dan pembinaan konsep sains dalam kalangan pelajar sekolah menengah rendah. Kajian juga memberikan implikasi kepada perlunya pendidik sains di sekolah menengah mempelbagaikan kaedah pengajaran konsep sains seperti yang disarankan oleh Kementerian Pendidikan Malaysia.

Kata Kunci: Peta konsep, Pendidikan Sains, Kaedah pengajaran, Kuasi-eksperimen, Transperansi OHP.

Abstract

The phenomena of memorizing facts impacted the effectiveness of teaching and learning practises, and had caught the attention of many educational psychologists. This situation had also contributed to misconceptions in various areas in science including environmental science. This study aims to compare teachings using concept map approach based on constructivisme theory with teachings using traditional approach (OHP transparencies) on the topic of 'Air Around Us' in form one science subject. This study used both quantitative and qualitative approach. For the quantitative approach, the pre test and post test control group quasi-experiment research design was employed. Two classes were randomly selected from 11 classes within the research site. The sample size for the quantitative approach was 60 students whereby 30 students were in the experimental group and 30 students in the control group. Semi-structured face-to-face interviews were used to collect the qualitataive data whereby eight respondents were purposively selected, four were from the experimental group and four from the control group. The findings show that students who were exposed to concept maps performed better than students who were exposed to to traditional approach. The findings also show that students who were taught using concept maps were able to relate the concepts and shown positive perceptions towards the use of concept maps in learning the topic of 'Air Around Us'. This study contributes to the field of science education within the context of understanding and construction of science concepts among lower secondary school students. The study also implies that there is a need for science educators in secondary schools to vary their approaches in teaching science concepts as proposed by the Ministry of Education.

Keywords: Concept maps, Science Education, Teaching method, Quasi-experiement, OHP transparencies.

Penghargaan

Alhamdulillah dengan izin, dan rahmatnya penulisan tesis ini telah berjaya disiapkan. Tesis ini tidak akan terhasil dengan usaha saya secara sendirian, tanpa pelbagai interaksi. Terima kasih yang tidak terhingga kepada mereka yang telah menyumbang komen, idea dan sokongan umum. Ucapan terima kasih ini saya tujukan khusus kepada: Penyelia saya, Prof. Madya Dr. Ruzlan bin Md. Ali di atas sikap keterbukaan, semangat dan sokongan yang diberikan dari mula hingga akhir. Isteri saya, Harlinda binti Ahmad atas sokongan dan galakkan yang diberi, serta kesabaran dalam mendidik anak, bagi membolehkan saya untuk memulakan kerja dan menyelesaikannya. Anak-anak (Nur Aqilah, Muhammad Aiman, Muhammad Akif dan Nur Madihah yang seringkali bertanya "Bilakah tesis ini akan disiapkan?" Sesungguhnya Abad ke-21 ini menjanjikan banyak pengalaman pembelajaran. Guru-guru yang terlibat di mana saya telah mengganggu kehidupan mereka. Pelajar-pelajar yang telah saya mengajar di mana daripada mereka saya telah banyak belajar dan tidak lupa kepada abah, mak yang telah membesar dan mendidik saya tanpa jemu, tanpa doa, kasih sayang, sokongan, nasihat, kesabaran dan galakan daripada mereka, tahap ini tidak mungkin dapat saya capai.

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Senarai Jadual

Senarai Rajah

BAB SATU
PENGENALAN

1.1 Latar Belakang Masalah Kajian

Kejayaan pelajar berkait rapat dengan aktiviti pengajaran dan pembelajaran yang menekankan tentang bagaimana untuk menyusun atur, menyimpan, dan mengingati semula maklumat yang tersimpan di dalam otak (Meyer, 2001). Proses tersebut memerlukan kemahiran bagi menggalakkan pemindahan pengetahuan melalui proses pengajaran dan pembelajaran yang diperoleh dalam bilik darjah (Ausubel, 2000). Situasi ini melibatkan keupayaan seseorang untuk mendapatkan ilmu pengetahuan dan mengaplikasikannya (Ausubel, 2000; Novak & Canas, 2008).

Sejak beberapa dekad yang lalu, penemuan yang konsisten telah wujud melalui penyelidikan kognitif berkaitan dengan pengetahuan sedia ada yang berfungsi sebagai asas penyatuan kepada maklumat baru yang diperoleh (Hale, 2006; Murphy & Alexander, 2004). Pengetahuan sedia ada boleh ditakrifkan sebagai asas pengetahuan yang menyatukan maklumat yang tersimpan dengan pengalaman baru yang diperoleh oleh pelajar. Pelajar yang menghubungkan pembelajaran baru dengan apa yang sudah diketahui, akan secara tidak langsung mewujudkan pembelajaran yang lebih bermakna (Ausubel, 2000).

Pengkaji-pengkaji seperti Marzano (2007), Ormrod (2007), Thompson dan Zamboanga, (2004) telah menemui kesan positif pengetahuan sedia ada terhadap pencapaian pembelajaran dari segi pemahaman dan ingatan dalam mata pelajaran sains.

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