



UNIVERSITI PUTRA MALAYSIA

**EFFECTS OF FACILITATION ON CRITICAL THINKING OF ADULT ESL
LEARNERS ENGAGED IN SOLVING ILL-STRUCTURED PROBLEMS
THROUGH ASYNCHRONOUS ONLINE FORUMS**

AIDA AZLINA HJ MOHD BEE

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By

AIDA AZLINA HJ MOHD BEE

**This thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia,
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This quasi-experimental study examined the effects of using questions as facilitation to guide student exploration of ill-structured problems in asynchronous online forums on the critical thinking of adult ESL learners in a blended learning environment. A mixed methods approach was used to collect and analyse the data. In this pretest posttest control group format, twenty groups were randomly divided into the experimental and control groups where students worked on three different ill-structured problems consecutively. Only students in the experimental groups received facilitation as they worked through the problems.

Data were collected using the Cornell Critical Thinking Test Level X (CCTT Level X) and the online forum transcripts. The statistical analysis showed that students significantly improved from the pretest to posttest after treatment ($p < 0.05$). Data from

the texts of online interaction showed that with facilitation, students were guided to identify the problem before providing solutions and to check the viability of suggested solutions before making decisions. The occurrence of critical thinking also greatly increased when students received facilitation during their discussion. The qualitative results not only substantiated the quantitative findings but also highlighted the accommodating features of asynchronous online forums that support the development of critical thinking. Both students and the facilitator had time to think and reflect on their thoughts, and the flexibility to respond at any time that was convenient for them. The asynchronous features seem favourable to adult learners.

The study provides evidence that facilitating student discussion of ill-structured problems using questions promotes and develops critical thinking. It offers alternative teaching practices that make effective use of the infusion of asynchronous networks and learning instructions as educational tools in online learning environments that support constructivist principles and collaborative learning in order to develop critical thinking. Based on the findings of the study, a model was suggested using the Nine Teacher Strategies listed by Udall and Daniels for better facilitation of discussion of ill-structured problems in online learning environments.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah.

**KESAN SOKONGAN KE ATAS PEMIKIRAN KRITIS PELAJAR ESL
DEWASA YANG BERBINCANG TENTANG PERMASALAHAN RAMBANG
MENGUNAKAN FORUM MAYA SECARA ASINKRONI**

Oleh

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Kajian kuasi eksperimen ini bertujuan mengenalpasti kesan menggunakan soalan sebagai sokongan untuk membantu eksplorasi permasalahan rambang (*ill-structured problems*) di forum maya secara asinkroni ke atas pemikiran kritis pelajar ESL dewasa yang mengikuti pembelajaran separa maya. Pendekatan kaedah bercampur digunakan untuk mengumpul dan menganalisis data. Dengan menggunakan rekabentuk kumpulan kawalan pra-ujian pasca-ujian, dua puluh kumpulan diagihkan secara rawak kepada kumpulan eksperimen dan kawalan dimana pelajar membincangkan tiga permasalahan rambang yang berlainan satu persatu. Hanya para pelajar dalam kumpulan eksperimen diberikan sokongan berbentuk soalan semasa perbincangan.

Data dikumpulkan dari Ujian Pemikiran Kritis Cornell Tahap X (*CCTT Level X*) dan transkrip forum maya. Analisis statistik menunjukkan kenaikan yang signifikan dari

pra-ujian ke pasca-ujian selepas rawatan ($p < 0.05$). Data dari teks interaksi maya menunjukkan bahawa dengan soalan bantuan, pelajar memperoleh panduan dalam mengenalpasti masalah sebelum memberikan penyelesaian dan memeriksa tahap kesesuaian cadangan penyelesaian sebelum membuat keputusan. Soalan bantuan juga menaikkan kekerapan penggunaan pemikiran kritis semasa pelajar membincangkan permasalahan rambang. Keputusan kualitatif bukan sahaja memperkukuh keputusan kuantitatif malah menonjolkan ciri asinkroni forum maya yang membantu perkembangan pemikiran kritis. Baik pelajar mahupun fasilitator mempunyai masa untuk berfikir dan mempertimbang pemikiran mereka, dan juga fleksibiliti untuk memberi respon pada masa yang bersesuaian dengan mereka. Ciri-ciri asinkroni nampaknya cenderung menyokong pelajar dewasa.

Kajian ini membuktikan bahawa membantu pelajar membincangkan permasalahan rambang dengan sokongan berbentuk soalan mampu menggalak dan memperkembang pemikiran kritis. Ia menawarkan alternatif kepada penyediaan pengajaran yang menggabung secara efektif sesawang asinkroni dan arahan pembelajaran sebagai peralatan belajar dalam persekitaran pembelajaran maya yang menyokong prinsip konstruktivis dan pembelajaran berkumpulan dengan tujuan memperkembang pemikiran kritis. Berdasarkan kepada dapatan kajian, dicadangkan sebuah model yang menggunakan Sembilan Strategi Pengajaran yang digariskan oleh Udall dan Daniels untuk menambahbaik proses sokongan bagi pelajar yang mengadakan diskusi permasalahan rambang dalam persekitaran pembelajaran maya.

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