

RELATIONSHIP BETWEEN PROBLEM-BASED LEARNING
EXPERIENCE AND SELF-DIRECTED LEARNING READINESS

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A project report submitted in partial fulfillment of the requirements for
the award of the Degree of
Master of Technical and Vocational Education

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APRIL, 2007

“I hereby declare that the work in this report is my own except for quotations and summaries which have been duly acknowledged”

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For my loving parents. Thank you for always being there for me.

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ABSTRACT

Tun Hussein Onn University of Malaysia (UTHM) has been implementing Problem-Based Learning (PBL) to some degree in various subjects. However, to this day no empirical data has been gathered on the effectiveness of PBL as a methodology to develop self-directed learning (SDL) skills. The purpose of this study is to investigate self-directed learning readiness (SDLR) among UTHM students exposed to varying PBL exposure intensity. SDLR was measured using the modified version of Self-Directed Learning Readiness (SDLRS). Participants in this study were first-year undergraduate students at UTHM. The instrument was administered to students in Electrical and Electronics Engineering, Civil and Environmental Engineering, and Technical Education ($N=260$). Data were analyzed using descriptive and inferential statistical techniques with analysis of variance (ANOVA) and the independent *t*-test for equal variance for hypotheses testing. The results of this study indicate that overall SDLR level increase with PBL exposure up to exposure intensity twice, beyond which no increase in SDLR was observed with increase in PBL exposure. Within the same academic programme, results did not show a statistically significant difference of SDLR level between groups exposed to varying PBL exposure intensity. However, significant difference was found in some dimensions of the SDLR for the Technical Education students. Within the same education background, results did not show a statistically significant difference of SDLR level between groups exposed to varying PBL intensity. However, significant difference was found in some dimensions of the SDLR for students with both Matriculations and STPM background. A statistically significant difference of SDLR level was found between Electrical Engineering and Technical Education students for exposure once and in some SDLR dimensions. No statistically significant difference was found between students from different academic programme for exposure twice or thrice. The data supports the conclusion that SDLR level increases with increase in PBL exposure intensity up to a certain extent only, beyond which no increase of SDLR can be observed. The data also suggest that only certain dimensions of the SDLR improve with increased exposure to PBL.

ABSTRAK

Universiti Tun Hussein Onn Malaysia (UTHM) telah melaksanakan Pembelajaran Berasaskan-Masalah (PBL) sehingga ke sesuatu tahap di dalam pelbagai subjek. Walau bagaimanapun, sehingga hari ini tiada data empirikal dikumpul mengenai keberkesanan PBL sebagai suatu metodologi dalam membangunkan kemahiran pembelajaran terarah sendiri (SDL). Tujuan kajian ini adalah untuk menyelidik kesediaan dalam pembelajaran terarah sendiri (SDLR) bagi pelajar-pelajar di UTHM yang terdedah pada keamatan pendedahan terhadap PBL yang berbeza-beza. Responden bagi kajian ini adalah pelajar-pelajar Ijazah Sarjana tahun pertama di UTHM. SDLR diukur menggunakan Skala Kesediaan dalam Pembelajaran Terarah Kendiri (SDLRS) yang telah diubah suai. Instrumen tersebut diagihkan kepada pelajar-pelajar Kejuruteraan Elektrik dan Elektronik, Kejuruteraan Awam dan Alam Sekitar, dan Pendidikan Teknikal ($N = 260$). Data telah dianalisa menggunakan teknik statistik deskriptif dan inferensi menggunakan *analysis of variance* (ANOVA) dan *independent t-test for equal variance* bagi menguji hipotesis kajian. Dapatan kajian ini mendapati secara keseluruhannya tahap SDLR meningkat seiring dengan pendedahan PBL sehingga keamatan pendedahan dua kali, seterusnya tiada peningkatan SDLR diperhatikan dengan peningkatan pendedahan terhadap PBL. Di dalam program akademik yang sama, dapatan tidak menunjukkan perbezaan signifikan secara statistik pada tahap SDLR di antara kumpulan-kumpulan yang terdedah pada keamatan pendedahan PBL yang berbeza-beza. Walau bagaimanapun, terdapat perbezaan signifikan pada dimensi SDLR tertentu bagi pelajar-pelajar dari Pendidikan Teknikal. Di dalam latar belakang pendidikan yang sama, dapatan tidak menunjukkan perbezaan signifikan secara statistik pada tahap SDLR bagi pelajar-pelajar dari kedua-dua latar belakang Matrikulasi dan STPM. Walau bagaimanapun, terdapat perbezaan signifikan pada dimensi-dimensi SDLR tertentu untuk pelajar-pelajar dari kedua-dua latar belakang Matrikulasi dan STPM. Pada pendedahan sekali, terdapat perbezaan signifikan secara statistik pada tahap SDLR di antara pelajar-pelajar dari Kejuruteraan Elektrik dan Pendidikan Teknikal serta dalam beberapa dimensi SDLR. Tiada perbezaan signifikan secara statistik didapati di antara pelajar-pelajar dari program akademik yang berlainan pada pendedahan dua kali atau tiga kali. Data menyokong kesimpulan bahawa tahap SDLR meningkat seiring dengan peningkatan keamatan pendedahan terhadap PBL sehingga pada sesuatu takat sahaja, seterusnya tiada peningkatan SDLR dapat diperhatikan. Data juga mencadangkan hanya dimensi SDLR tertentu sahaja yang meningkat seiring dengan peningkatan pendedahan terhadap PBL.

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LIST OF ABBREVIATIONS

α	-	Reliability
ANOVA	-	Analysis of variance
Ex0	-	No exposure
Ex1	-	Exposure once
Ex2	-	Exposure twice
Ex3	-	Exposure thrice
PBL	-	Problem-Based Learning
SDL	-	Self-directed learning
SDLR	-	Self-directed learning readiness
SDLRS	-	Self-Directed Learning Readiness Scale
SDLRS-A	-	Self-Directed Learning Readiness Scale- Adult version
STPM	-	<i>Sijil Pelajaran Tinggi Malaysia</i>
UTHM	-	Universiti Tun Hussein Onn Malaysia
LOL	-	Love of learning
Tolerance	-	Tolerance of risk, ambiguity, and complexity in learning
Selfconcept	-	Self-concept as an effective learner
Responsibility	-	Responsibility for one's own learning
Selfunderstanding	-	Self understanding of one's own learning
Initiative	-	Initiative in learning
Hardwork	-	Acceptance of hard work
Lifelong	-	View of learning as a lifelong beneficial process

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