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## Full Length Research Article

### THE EFFECT OF PROJECT-BASED LEARNING AGAINST STUDENTS' ENGAGEMENT

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#### ABSTRACT

This research was conducted to study the effects of project-based learning approach in terms of students' engagement in classroom of Information Communication Technology (ICTs). The study involved two sets of the modules, namely project-based learning with scaffolding and existing approaches. Both modules are used as a guide in the implementation of the project for the Computer Hardware topic. The study was based on a quasi-experimental approach using nonequivalent control groups design to evaluate the effectiveness of teaching approaches on students' engagement. In this study, 47 students from two (2) different schools in Kerian district, Malaysia were recruited. They were divided into two groups, namely the treatment group ( $n = 27$ ) and a control group ( $n = 20$ ). Hypotheses were tested using the independent t test at significance level of  $p < .05$ . Procedures of Partial eta-squared and  $r$  were used to calculate the effect sizes to measure the strengths of the relations between variables. The results indicated that there were significant differences in students' engagement. These findings indicate that the application of project-based learning is effective in supporting student learning in ICT in raising the level of engagement among them.

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#### INTRODUCTION

According to international assessments, Programme for International Students Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS), the gap between the education system in Malaysia and other countries is widening (Malaysian Education Blueprint 2013-2025 (PPPM), 2012). If the level of education is not upgraded to international standards and school achievement gap is not reduced, Malaysia will be left behind and lose its competitiveness in the future (Tenth Malaysia Plan (RMK-10, 2012). Besides students' performance assessment, PISA also carries out assessments the level of student engagement in school environment. The level of student engagement in the classroom is an important aspect in assessing education (Lutz, Guthrie, and Davis, 2006) because it is significantly correlated with the level of student achievement (Fredricks, Blumenfeld, and Paris, 2004; PISA, 2003).

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Studies show that students who less engagement in school have low achievement and likely to leave school with inadequate qualifications (PISA, 2003). The effort to improve and strengthen the education system is made to ensure that students has equipped with knowledge, skills, effective communication, ability to use Information Technology (IT), think creatively and critically, and act rationally (RMK-10, 2012). Therefore, more emphasis is given to student participation in various activities in order to foster their personal development (10th MP, 2012). Studies on student engagement in the classroom environment is based on engagement of emotional, behavioral and cognitive (National Center for School Engagement (NCSE, 2006). Because of rapid changes in the development and advancement of IT, the content of the curriculum for the ICT subjects is revised and updated by the Ministry of Education (MOE) by focusing on the knowledge of software applications and computer hardware (Curriculum Development Centre (PPK), 2006a). In order to achieve the objectives of ICT curricula, teachers must play a role in the classroom to help students develop skills for living in a society based on knowledge and technology (Vega and Brown, 2013). Teachers can create active learning environments that engage students to collaborate with each

other, particularly in the developing and designing a quality product. Through collaborative activities may encourage students to interact with each other to form a consensus in decision-making (Anghileri, 2006). Teachers also need to help and support student learning by providing various forms of scaffolding (Anghileri, 2006; Chang and Sun, 2009; Henning, Verhaegh, and Resing, 2011; Zhang, 2011). The emphasis on student-centered learning activities is to build the student knowledge with the help of social interaction with teachers and peers which exists only in a constructivist learning environment (Wang, 2008). Among the learning approaches that based on constructivist theory of social development is PjBL approach. Therefore, PjBL approach is expected to add value to existing approaches and make it as one of the alternative approach (Chinowsky, Brown, Szajman, and Realph, 2006) in a classroom environment. PjBL is considered a good platform to foster the skills of meaningful learning and a high order thinking (Acar, 2013; Blumenfeld et al. 1991; Marx, Blumenfeld, Krajcik, and Soloway, 1997). PjBL is characterized by social constructivism which states that collaborative learning allows students to learn from each other, built the right knowledge, and meant. (Robinson, 2013; Wang, 2008).

### Issue

The old model of schooling that involves learning passively are not appropriate for preparing students for life in today's world (Educational Technology Division (BTP), 2006). Passive learning occurs when students are only involved in activities like listen, ask questions, and answered questions posed by the teacher (Minter, 2011). Meanwhile, the answers given by them depend on the source of the information obtained from their teachers (Minter, 2011). Therefore, teachers need to shift from passive to active learning or student-centered learning (Biggs and Tang, 2011) so that students can adapt a new knowledge with existing knowledge to build a new knowledge in their minds with the help of social interaction with teachers and other students (PPK, 2001). According to the constructivism learning theory, knowledge cannot be taught, but must be built by the students themselves (McLeod, 2007). PjBL approach is a model for classroom activity that shifts away from the usual classroom practices of short, isolated, teacher-centered lessons.

The characteristic of project approach is long-term, interdisciplinary, student-centered, and integrated with real-world issues and practices. It is a method that fosters intellectual tasks to explore complex issues. It promotes understanding, which is true knowledge. In project approach, activities are in a meaningful ways. It is more to, how adults are asked to learn and demonstrate knowledge (BTP, 2006). PjBL approach as an alternative approach, the right choice, and the appropriate application in the field of education (Chinowsky et al., 2006; Gulbahar and Tinmaz, 2006; Guthrie, 2008), to provide students with 21st century skills (Bell, 2010; Kravitz, Hixson, English, and Mergendoller, 2011; Vega and Brown, 2013). In the classroom environment, project approach can increase student engagement because projects activity allows students to take responsibility, asking questions, make decisions, analyze, think critically, create, and make a presentation (Stripling et al., 2009). PjBL approach is one of

the approaches that enable students who are learning at all levels to engage in learning activities actively (Baran and Mak, 2010). In fact, with the project approach, students can improve their attitudes level toward learning (Thomas, 2000). However, according to Barron et al. (1998), it is difficult to maintain student engagement during implementation of the project.

### Objective

The main focus of this study is to investigate the effect of the PjBL approach on students' engagement while conducting the project.

### Hypothesis

Mean of student engagement among treatment groups that using PjBL with scaffolding and control groups that using an existing approach is the same.

## MATERIALS AND METHODS

### Study Design

When pure experimental designs cannot be controlled by a researcher for a number of reasons such as the current group that has been set, when treatment is not determined from a group, or when there is no control group or comparison group that is suitable then, researchers may choose to use a quasi-experimental design (Best and Kahn, 2006; Creswell, 2008; Fraenkel and Wallen, 2009; Gall, Gall, and Borg, 2010; Gay, 1987; Gay, Mills, and Asian, 2009; McMillan, 2008). This study design is commonly used in the field of education, psychology, and sociology research (Campbell and Stanley, 1963; McMillan, 2008; McMillan and Schumacher, 2006). Quasi-experimental approach using none equivalent control group designs is most widely used in the fields of education research (Campbell and Stanley, 1963; Cibik and Yalcin, 2012; Cook and Campbell, 1979; McMillan, 2008).

### Questionnaire

According to Fredricks et al. (2004) and Hanndelsman et al. (2005), most studies that examined the engagement in the context of the classroom is through question naires by the teacher or the student. The question naire contains a series of statements about the degree of acquisition of the students can see and accomplish in specific areas. The question naire consists of 42 questions that was obtained and adapted from the National Center for School Engagement (NCSE), which measures the level of engagement encompasses three dimensions; emotional, cognitive, and behavioral. The next procedure is to have the validity and reliability of questionnaire items. Cronbach alpha values used to test the internal consistency of the instrument (Creswell, 2008). The reliability of the questionnaire are shown in Table 1. The value of  $\alpha$  is at a good level. In conclusion, the coefficient of reliability is acceptable because according to research practitioners in the social sciences is at least .60 (Khera, 2006). In the quasi-experimental design, the comparison should be made is between the pre and post scores from a question naire of engagement for each group, namely the experimental group

and the control group. The goal is to determine whether there are significant differences between the scores before and after treatment by an appropriate statistical test.

## RESULTS

The hypothesis of the mean difference for a variable of the two populations (treatment group and the control group) is the independent t test. Table 2 shows that the distribution of the data is normal to the Shapiro-Wilk test,  $p > .05$ . This test is two-tailed because of differences in the sample in any direction will reject the null hypothesis. Based on Table 3, the results showed that there was no significant difference in the mean (M) score with a standard deviation (SD) of the students in the experimental group with students in the control group.

**Table 1. Coefficient of reliability**

Location	Sample Size	Alfa Cronbach ( $\alpha$ ) value
School A	27	.869
School B	18	.854
School C	15	.821

**Table 2. Normality test**

Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
Statistic	df	p	Statistic	df	P
.073	47	.200*	.974	47	.368

**Table 3. Independent Sample t Test Before Treatment**

Teaching Approach	N	Mean (SD)	t	Sig.
PjBL with Scaffolding	27	162.52(14.836)	-9.00	.373
Existing PjBL	20	171.00(11.987)		
Total	47			

$p > .05$

**Table 4. Independent Sample t Test After Treatment**

Equal Variances Assumed	
Levene Test:	
F	.286
Sig.	.596
t test:	
t	-2.098
df	45
Sig. (2-tailed)	.042
Mean Difference	-8.481
Std. Error difference	4.043
95% CI:	
Lower Limit	-16.625
Upper Limit	-.338

Note. CI= Confidence Interval

The mean score for students in the pretest in the experimental group and the control group was ( $M = 167.70$ ,  $SD = 10.89$ ) and ( $M = 170.70$ ,  $SD = 11.79$ ),  $t = -9.00$   $p > .05$ , respectively. Therefore, fail to reject the null hypothesis and can be concluded that there was no significant difference in the degree of engagement of the two groups before treatment. This finding further suggests that students in both groups were homogeneous in terms of their level of previous engagement. Table 3 also shows that the mean reported for the treatment group and the control group was 162.52 and 171.00, respectively. Research hypothesis states that the two groups have different mean. It is true based on the output displayed.

Based on Table 4, it was found that the level of significance of Levene test is .60, while the value is greater than .05. The output shows that there are differences between the two groups in terms of the engagement level ( $t(45) = -2.10$ ;  $p = .04$ ). Due to the probability of obtaining the observed sample results if the null hypothesis is true .04 then, the null hypothesis is rejected. The findings were statistically significant. Therefore, it is concluded that the level of student engagement among treatment and control group is different. The difference between the mean value is  $d = -.63$  and the effect size of  $r = .30$ . Further, Cohen's effect size value ( $d = .63$ ) suggested a moderate to high practical significance.

## DISCUSSION

The results show that there are differences in the level of engagement between students in the treatment group and a control group. The study showed that the Pj BL approach has related to positive learning outcomes (Fredricks et al., 2004). Pj BL also a teaching approach that foster students to participate actively in the process of learning (Jody, 2012; Chu, Minasian, and Xiaoke, 2012; Chun-Ming, Gwo-Jen, and Wen, 2012; Fernandes et al., 2014; Verma et al., 2011). Hardjito (2010), found that the scaffolding is a suitable practice to engage students in their learning. He also found that each student participate actively in the learning process because they do not just listen passively, but engage in different activities (Hardjito, 2010), like discussion, planning, gain information, and the process to produce the project (Aiedah and Audrey, 2012). Apparently, the intervention conducted on PjBL approach, which systematically integrates a scaffolding as a teaching strategy has an impact on the level of engagement of ICT within the experimental group. The findings of previous studies have shown that the PjBL approach (Filippatou and Kaldi, 2011; Yamand Rossini, 2010) and the implementation of scaffolding in the learning process (Lu et al., 2010; Lutzetal., 2006; Rymaz and McLarney, 2011; Schweiter, 2010; Simons and Klein, 2006) have the potential to raise the level of student engagement. To be successful in planning, teachers need to have knowledge and skills about the process of implementation of the PjBL and how to integrate the scaffolding as a teaching strategy. They also need to encourage the students who prefer to work in a traditional learning environment that only involve very little effort (Fredricks et al., 2004), for greater efforts to complete the assignment by participating actively (Aiedah and Audrey, 2012). Teachers also need to encourage all students to be equally involved in project learning activities (BTPN, 2007). A clear explanation of the process of implementation, objectives and benefits of the project work was able to overcome the problems of students with less attention and cooperation in the group (BTPN, 2007).

## Conclusion

In conclusion, PjBL is still in the development stage, but there is no research or empirical data that can be said that the PjBL as an alternative approach compared to other learning approach. Based on information obtained in recent years, it is clear PjBL can be an effective approach to improving the level of student engagement. Therefore, it can be concluded that an effective approach to learn knowledge and skills is to apply

the scaffolding as a teaching strategy in PjBL approach in promoting the learning environment.

## REFERENCES

- Acar, G. 2013. The Effect of Project-Based Learning on Students' Motivation. *International Journal Of Academic Research*, 5(2), 82-86. doi:10.7813/2075-4124.2013/5-2/B.11
- Aiedah A.K. and Audrey L. K.C. 2012. Application of Project-Based Learning in Students' Engagement in Malaysian Studies and English Language. *Journal of Interdisciplinary Research in Education (JIRE)*, 2(1), 37-46. Retrieved from [http://www.myjurnal.my/filebank/published\\_article/25666/03.pdf](http://www.myjurnal.my/filebank/published_article/25666/03.pdf)
- An initiative of the Colorado Foundation for Families and Children Retrieved from <http://www.schoolengagement.org/TruancyPreventionRegistry/Admin/Resources/Resources/QuantifyingSchoolEngagementResearchReport.pdf>
- Anghileri, J. 2006. Scaffolding practices that enhance mathematics learning. *Journal of Mathematics Teacher Education*, 9(1), 33–52. doi:10.1007/s10857-006-9005
- Bahagian Teknologi Pendidikan (BTP). September, 2006. *Project-Based Learning Handbook*. Kuala Lumpur:
- Baran, M. and Maskan, A. K. 2010. The effect of project-based learning on pre-service physics teachers' electrostatic achievements. *Cypriot Journal of Educational Science*, 5, 243–257.
- Barron, Brigid J. S., Schwartz, Daniel L., Vye, Nancy J., Moore, Allison, Petrosino, Anthony, Zech, Linda, Bransford, J. D. 1998. Doing with Understanding: Lessons from Research on Problem- and Project-Based Learning. *Learning*, 7(3).
- Bell, S. 2010. the Future Project-Based Learning for the 21st Century: Skills for. *Leadership*, 83(March, 2012), 39–43. doi:10.1080/00098650903505415
- Best, J.W. and Kahn, J.V. (10<sup>th</sup> Ed.). 2006. *Research in education*. USA: Pearson Education, Inc.
- Biggs, J. and Tang, C. (4<sup>th</sup> Ed.). 2011. *Teaching for quality learning at university: The society for research into higher education*. England: McGraw Hill.
- Blumenfeld, P., Soloway, A., Marx, R. W., Krajcik, J. S., Guzdial, M. and Palinscar, A. 1991. Motivating Project Based Learning: Sustaining the Doing, Supporting the Learning. *Educational Psychologist*, 26(383), 369-398.
- Campbell, D. T. And Stanley, J. C. 1966. *Experimental and quasi-experimental designs for research*. Boston: Houghton Mifflin Company.
- Chang, W.L. and Sun, Y.C. 2009. Scaffolding and web concordancers as support for language learning. *Computer Assisted Language Learning*, 22(4), 283–302. doi:10.1080/09588220903184518
- Chinowsky, P. S., Brown, H., Szajman, A. and Realph, A. 2006. Developing Knowledge Landscape through Project-Based Learning. *Issues in Engineering*, (April), 118–125.
- Chu, R. H., Minasian, R. A. and Xiaoke, Y. 2012. Inspiring student learning in ICT communications electronics
- Chun-Ming, H., Gwo-Jen, H. and Iwen, H. 2012. A Project-based Digital Storytelling Approach for Improving
- Çibik, A. and Yalçın, N. 2012. The Effect of Project Based Learning Supported with Analogies on Attitudes of Students towards Physics. *Gazi University Journal Of Gazi Educational Faculty (GUJGEF)*, 32(1), 185-203.
- Cook, T.D. and Campbell, D. T. 1979. *Quasi-experimentation: design and analysis issues for field settings*. Rand
- Cresswel, J.W. (3<sup>rd</sup> ed.). 2008. *Educational Research: Planning conducting and evaluating quantitative and qualitative research*. Perason: Merrill Prentice Hall.
- duنيا. [http://www.moe.gov.my/userfiles/file/RMK10bab5%2014\\_6\\_10.pdf](http://www.moe.gov.my/userfiles/file/RMK10bab5%2014_6_10.pdf)
- Fernandes, S., Mesquita, D., Flores, M. and Lima, R. M. 2014. Engaging students in learning: findings from a study of project-led education. *European Journal Of Engineering Education*, 39(1), 55-67. doi:10.1080/03043797.2013.833170
- Filippatou, D. and Kaldi, S. 2011. The Effectiveness of Project-Based Learning on Pupils with Learning Difficulties Regarding Academic Performance, Group Work and Motivation. *International Journal Of Special Education*, 25(1), 17-26.
- Fraenkel, J.R. and Wallen, N.E. (7<sup>th</sup> Ed.). 2009. *How To Design And Evaluate Research In Education*. Boston: Mc. Graw. Hill, Inc.
- Fredricks, J. A., Blumenfeld, P., Friedel, J. and Paris, A. 2004. For Indicators of Positive Development Conference March 12-13. *Development*, 1–49.
- Gall, M.D., Gall, J.P. and Borg, W.r. (10<sup>th</sup> Ed.). 2010. *Applying educational research: how to read, do, and use research to solve problems of practice*. Boston: Pearson Education, Inc.
- Gay, L.R. 1987. *Educational research: competencies for analysis and applications*. Columbus: Merrill.
- Gay, L.R., Mills, G.E. and Asian, P.A. (9<sup>th</sup> Ed.) 2009. *Educational research: competencies for analysis and applications*. New Jercey: Merrill.
- Gülbahar, Y. and Tinmaz, H. 2006. Implementing Project-Based Learning And E-Portfolio Assessment In an Undergraduate Course. *Journal of Research on Technology in Education*, 5191, 309–327.
- Guthrie, C. 2008. Towards Greater Learner Control: Web Supported Project-Based Learning. *Journal of Information Systems*, 21(1), 121–131.
- Hanndelsman, M. M., Briggs, W. L., Sullivan, N. and Annette, T. 2005. Student Course Engagement. *The Journal of Educational Research*, 98(3), 184–191.
- Hardjito, D. 2010. The Use of Scaffolding Approach to Enhance Students' Engagement in Learning Structural Analysis. *International Education Studies*, 3(1), 130–136.
- Henning, J. R., Verhaegh, J. and Resing, W. C. M. (2011). electronic series completion task. *Educational and Child Psychology*, 28(2), 85–100.
- Jackson, S. 2012. Project-based learning. Retrieved from [http://www.scholastic.ca/education/teaching\\_tip/february2012.html](http://www.scholastic.ca/education/teaching_tip/february2012.html)
- Learning — MarineTech Project. *Learning*, (September), 25–32.
- Lu, J., Lajoie, S. P. and Wiseman, J. 2010. Scaffolding problem-based learning with CSCL tools. *International Journal of Computer-Supported Collaborative Learning*, 5(3), 283–298. doi:10.1007/s11412-010-9092-6
- Lutz, S. L., Guthrie, J. T., and Davis, M. H. 2006. Scaffolding for Engagement in Elementary School Reading

- Instruction. *The Journal of Educational Research* 100(1), 3-20.
- McLeod, S. A. 2007. Simply Psychology: Vygotsky. Retrieved from <http://www.simplypsychology.org/vygotsky.htm>
- McMillan, J. H. (5<sup>th</sup> ed.). 2008. *Educational Research: Fundamentals for the consumer*. Boston: Pearson Allyn and Bacon.
- McNally College Pub. Co.
- Minter, M. K. 2011. Learner-Centered ( LCI ) Vs . Teacher-Centered ( TCI ) Instruction: A Classroom Management Perspective. *Journal of Business Education*, 4(5), 55–63.
- MOE.
- National Center for School Engagement (NCSE). (2006). Quantifying School Engagement: Research Report.
- Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025. 2012. Pendidikan Prasekolah hingga Lepas Menengah. (atas talian) [http://www.moe.gov.my/cms/upload\\_files/articlefile/2013/articlefile\\_file\\_003107.pdf](http://www.moe.gov.my/cms/upload_files/articlefile/2013/articlefile_file_003107.pdf)
- Programme for International Students Assessment (PISA). (2003). PISA Measures of Students Engagement. OECD.
- Pusat Perkembangan Kurikulum (PPK). (2001). *Pembelajaran Secara Konstruktivisme*. Kementerian Pelajaran Malaysia (KPM).
- Pusat Perkembangan Kurikulum (PPK). 2006. *Huraian Sukatan Pelajaran ICT*. Kementerian Pelajaran Malaysia (KPM).
- Rancangan Malaysia ke-10 (RMKe- 10). 2012. Bab 5. Membangun dan mengekalkan modal insan bertaraf
- Ravitz, J., Hixson, N., English, M. and Mergendoller, J. 2011. Using project based learning to teach 21.
- Robinson, J. 2013. Project-based learning: improving student engagement and performance in the laboratory. *Analytical and Bioanalytical Chemistry*, 405(1), 7-13. doi:10.1007/s00216-012-6473-x
- Rymarz, R. and McLarney, G. 2011. Gerard McLamey. *The Journal of Adult Theological Educatio*, 8(1), 53–64. doi:<http://dx.doi.org/10.1558/JATE.v8il.53> ISSN
- Schwietzer, J. W. 2010. Developing Second Language : Writing Through Scaffolding In The ZPD : *A Magazine Project For An Authentic Audience*, 7(10), 31–46.
- Simons, K. D. and Klein, J. D. 2006. *The Impact of Scaffolding and Student Achievement Levels in a Problem-based Learning Environment*. *Instructional Science* (pp. 41–72). doi:10.1007/s11251-006-9002-5
- Stripling, B., Commitante, A. and Abrahams, C. 2009. Project Based Learning: Inspiring Middle School Students to Engage in Deep and Active Learning. New York: Chambers Street.
- Students' Learning Motivation, Problem-Solving Competence and Learning Achievement. *Journal Of Educational Technology and Society*, 15(4), 368-379.
- Thomas, J. W. 2000. *A Review Research on Project-Based Learning* . Retrieved October 11, 2011, from autodesk.com: <http://www.autodesk.com/foundation> through a new integrated project-based learning approach. *International Journal Of Electrical Engineering Education*, 49(2), 127-135. doi:10.7227/IJEEE.49.2.3
- Vega, A. and Brown, C. 2013. The Implementation of Project-Based Learning. *National Forum of Educational Administration and Supervision Journal*, 30(2), 4-29.
- Verma, A. K., Dickerson, D. and McKinney, S. 2011. Engaging Students in STeM careers with Project-Based
- Wang, Q. 2008. A generic model for guiding the integration of ICT into teaching and learning, 45(4), 411–419. doi:10.1080/14703290802377307
- Yam, L. H. and Rossini, P. 2010. Implementing Project-Based Learning Approach in Introductory Property Course. *16th Pacific Rim Real Estate Society* (pp. 1-19). Wellington, New Zealand: University of South Australia.
- Zhang, Y. 2011. Supporting Adult Learners ' Use of Reading Strategies through Effective Literac Scaffolding, 7(2), 7–8.

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