

e-Library and Learning Object System (eL-LoS) : An Alternative Online Library and Learning Tools at Politeknik Kota Bharu, Malaysia

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Abstract

This article is written to explain the importance and needs of product development of online alternative media and e-Learning (ePedagogy) by utilizing the management of e-learning focusing on students centered via e-Library concept that called eL-LoS (e-Library and Learning Object System). This concept aims to improve the self-regulation of Mechanical Engineering Students in Kota Bharu Polytechnic, Kelantan when used this web based product that special touch with the needs in engineering knowledge, otherwise this product called Engineering Learning Tools & Objects (include PjBL & PBL concepts) and e-Library . This study was both quantitative and qualitative in nature. The quantitative data was analyzed using SPSS software version 11.5. A total of 36 diploma students from the final semester of Mechanical Engineering Department were selected as respondents for the pilot test. This study finds that the mean of the important and needs of product development of Web Based program called eL-LoS at value point 4.612. On the other hand, the result of interview and observation on the usage for the qualitative research of eL-LoS to shows the effect on the development of students' self-regulation. It is hoped that the concept of online e-Library can be further developed and implemented in the education system of Malaysia.

Keywords: Online Alternative media of e-Learning (ePedagogy), e-Library and Learning Object System (eL-LoS), Importance, Need, Project Based Learning (PjBL), Problem Based Learning (PBL), and Student Self-Regulation.

1.0 Introduction

This article is written to explain the concept of online Alternative media of e-Learning (e-Pedagogy) by utilizing the management of e-learning focusing on students centered via e-Library and Learning Object System that called eL-LoS (*e-Library and Learning object System*) (Abdul Ghafar Md Din, 2003). This concept aims to improve the self-regulation of Mechanical Engineering Students in Kota Bharu Polytechnic, Kelantan (Morsund & David., 2002). This eL-LoS product that special touch with the needs in engineering knowledge, otherwise this product will generate a collaborative e-learning among engineering students at Politeknik Kota Bharu (PKB) (Md. Baharuddin Abdul Rahman, et. al., 2009).

2.0 The Concept of “eL-LoS” Development

The first procedure will come up with pilot research and data collection of needs for the Project eL-LoS Development. The Final product and concepts of used as per figure 1. Figure 1 shows the combination of two elements (e-library and learning object) and become soft ware of on line PnP called eL-LoS (Abd. Rahim Abd. Rashid ., 2007). This figure is written to explain the concept of online Alternative media of e-Learning (ePedagogy) by utilizing the management of e-learning focusing cross over disciplines and departments (Kamaruzaman Jusoff, et. al.,2010).

This concept aims to improve the on line students self-regulation in **e-learning** habits (Boekaerts, et. al., 2000). For the pilot project eL-LoS will carry on at Department of Mechanical Engineering. Hopefully when it’s been used, this web based product become special instruments to works as catalyzed in students learning development (Kurubacak & Gulsun., 2007). This project looks able to full fill the needs in engineering knowledge development match with Kementerian Pengajian Tinggi Malaysia (KPTM) philosophy (Synteta, P., 2002, 2003).

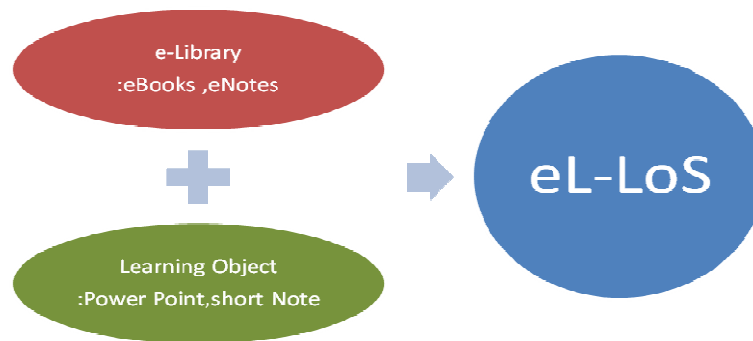


Figure 1: The Concept of “eL-LoS”

2.1 The Special Use of Product (eL-LoS) as e-Learning Tools

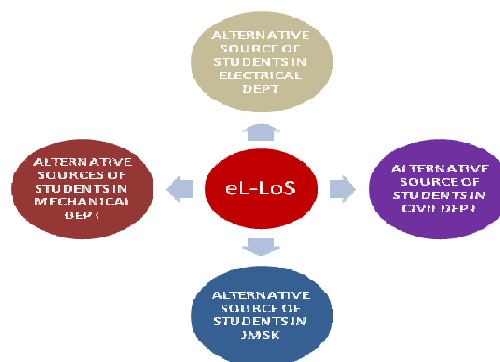


Figure 2: The Special Use of Product (eL-LoS) as e-Learning Tools

Above figure shown the over view of collaborative communications among four departments at Kota Bharu Polytechnics (Brandi Allen., 2006). This eL-LoS create students centered of discussion and data of knowledge collection by using eL-LoS (Noor Azean Atan, et. Al., 2006). This valuable concept of eL-LoS will support the e-learning for future 21 century learning (Jeyagobi, et. Al., 2007). The full utilizing of the students learning management via eL-LoS match with e-learning, that significantly matches with global learning (Md. Baharuddin Abdul Rahman, et. al., 2009). The eL-LoS focusing on students centered by working as e-Library without limitation of learning object full in (Thomas, J., 2000).. This concept aims to improve the self-regulation of Mechanical Engineering Students in Kota Bharu Polytechnic, Kelantan when used this web based product that special touch with the needs in engineering knowledge, otherwise this product will generate no limitation of time in accessing (Yang, H., 2001).

3.0 Data Collection of Project Needs

Data collection shown that the overall alpha value is at higher point (0.862). Below the table shows the value of alpha cronback’s:-

Table 1a: Case Processing Summary data’s of 36 Respondents

		N	Frequency (%)
*Cases	Valid	36	100.0
	Excluded ^a	0	0.0
	Total	36	100.0

Above data's analysis shown the case of processing summary of 36 respondents to evaluate of list wise details on all variables in the project eL-LoS development procedure.

Table 1b: The Reability of Statistics of 10 value questions.

*Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.862	0.863	10

Data's analysis at table 1b shown the cronbach's alpha at value point (0.862), and the alpha based on standardized of ten items is at value point (0.863).

Table 1c: Details Item Statistics of each mean item value of 10 questions

*Item Statistics				
Question		Mean	Std. Deviation	N
S1	Students Centered Online Web based	4.611	0.5492	36
S2	Online Web Based eBook Useful	4.639	0.5929	36
S3	Easy to Intering	4.500	0.6094	36
S4	Centered Sources (Knowledge Based)	4.389	0.5989	36
S5	Future Learning Guide (21 century learning)	4.611	0.5492	36
S6	Easy to get input (Learning Object & eLibrary)	4.667	0.5345	36
S7	Centre of Knowledge (Learning Input)	4.611	0.5492	36
S8	Make learning easier (Students & Lecturers)	4.694	0.4672	36
S9	Enhance students' motivation to explore knowledge (eLibrary)	4.694	0.4672	36
S10	Support innovative Pedagogy	4.750	0.5542	36

Data's analysis and figure shown that overall of ten items at above 4.0 value point. This shown that all respondents agreed that development of eL-LoS is matching at e-learning era right now.

Table 1d: The Summary Item Statistics of overall 10 item means

*Summary Item Statistics							
Item Means	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance	N of Items
Item Means	4.617	4.389	4.750	0.361	1.082	0.011	10

Data's analysis at table 1d shown that overall mean of ten items is at value point (4.617), the minimum mean point is at (4.389), the maximum mean points is at (4.750). for the overall range it's stated at value of (0.361), while the maximum and minimum points average is at value (1.082), and the total variance is at (0.011).

Table 1e: The Scale Statistics of overall 10 items Std. Deviation

*Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
46.167	13.457	3.6684	10

Data's analysis and table 1e shown that the overall mean scale statistics at value of (46.167), the variance at value (13.457), and the standard deviation is at (3.6684).

Table 2a: The Reliability of 5 items from variables in an Important of Product Development

*Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.808	0.809	5

Data's analysis at table 2a shown the cronbach's alpha for five items variable of an important of eLOS development at value of (0.808), and the value of cronbach's alpha based on standardized items (0.809).

Table 2b: The Mean Value of Variables in an Important of Product Development

*Item Statistics				
Question		Mean	Std. Deviation	N
S2	Online Web Based eBook Useful	4.639	0.5929	36
S3	Easy to Interling	4.500	0.6094	36
S4	Centered Sources (Knowledge Based)	4.389	0.5989	36
S6	Easy to get input (Learning Object & eLibrary)	4.667	0.5345	36
S10	Support innovative Pedagogy	4.750	0.5542	36

Above data's shown the analysis mean of five items at above (4.00) values. This mention the higher agreed from respondents regarding an important of product development.

Table 2c: The Summary item statistics of Variables in an Important of Product Development.

*Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum	Variance	N of Items
				/Minimum			
Item Means	4.589	4.389	4.750	0.361	1.082	0.021	5

Data's analysis at table 2c shown the overall summary of five items that includes; overall mean at value point (4.589), the minimum value at (4.389), the maximum range at (4.750), overall range is at (0.361), the maximum and minimum range are at value of (1.082), and overall variance is at (0.021).

Table 3a: The Reliability Statistics of 5 items in variable product needs.

*Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.745	0.744	5

Data's analysis at table 3a shown the cronbach's alpha for five items variable of needs of eL-LoS development at value of (0.745), and the value of cronbach's alpha based on standardized items (0.744).

Table 3b: The Mean Value of Variable in the Need of Product Development

*Item Statistics				
Question		Mean	Std. Deviation	N
S1	Students Centered Online Web based	4.611	0.5492	36
S5	Future Learning Guide (21 century learning)	4.611	0.5492	36
S7	Centre of Knowledge (Learning Input)	4.611	0.5492	36
S8	Make learning easier (Students & Lecturers)	4.694	0.4672	36
S9	Enhance students' motivation to explore knowledge (eLibrary)	4.694	0.4672	36

Above data's shown the analysis mean of five items at above (4.00) values. This mention the higher agreed from respondents regarding the needs of product development.

Table 3c: The Summary item statistics of Variables in the Needs of Product Development

*Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum	Variance	N of Items
				/Minimum			
Item Means	4.644	4.611	4.694	0.083	1.018	0.002	5

Data's analysis at table 3c shown the overall summary of five items that includes; overall mean at value point (4.644), the minimum value at (4.611), the maximum range at (4.694), overall range is at (0.383), the maximum and minimum range are at value of (1.018), and overall variance is at (0.002).

4.0 The Product “eL-LoS” Development

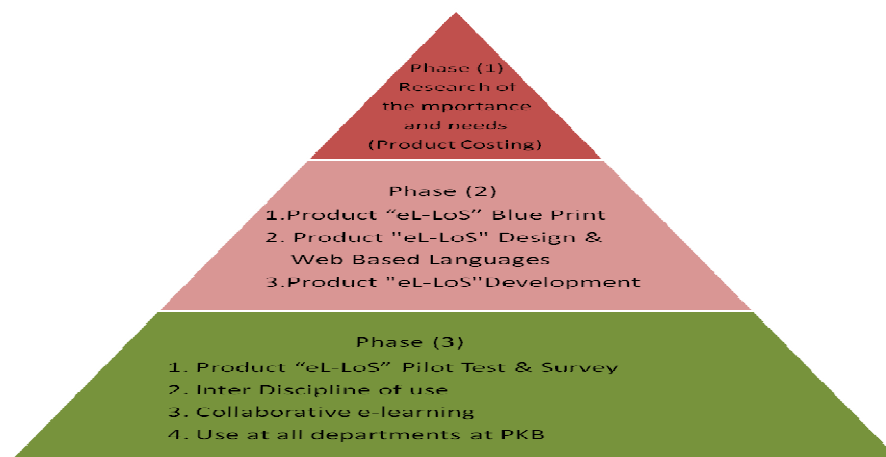


Figure 3: The 3 phase of “eL-LoS” Research and Development (R & D)

The table above showed the three (3) phase’s process of eL-LoS development where; Phase 1 is the research data collection of importance and the needs of product development. From research data’s shown, the importance and needs of eL-LoS development. Then phase 2 is the process of eL-LoS development where it’s includes a) The Product “eL-LoS” Blue Print, b) The Product eL-LoS Design & Web Based Languages, and c) The Process of Product eL-LoS Development. For the phase (3) is the Product “eL-LoS” Pilot Test & Survey, the Inter Discipline of used, product implementation where its works as collaborative e-learning, and lastly its will be used at all department at PKB.

5.0 The Survey data’s of Product “eL-LoS” Pilot test

Below statements shows the tabulation of the survey and responses from respondents match with 5 items on the survey questionnaire.

Item 1 attempt to assess the students’ perception *whether multiple activities and procedures in the eL-LoS increase students’ self-directed learning to achieve higher performance in carrying out tasks related to the project*. The improve in students self regulate to use eL-LoS was obtained, indicating the students’ agreement that by applying the self-regulatory skill in undertaking the activities and procedures as stated in the PjBL module helps in achieving better results.

Item 2 attempts to assess the students’ perception *whether the eL-LoS facilitates the students’ understanding of planning in developing a engineering knowledge*. From the survey responents indicated the students’ agree that the eL-LoS was helpful in understanding the concept of eL-Los via using Learning Object and e-Library.

Item 3 attempts to collect input *whether the activities in the eL-LoS were systematic and enjoyable*. As can be seen after pilot the eL-LoS at Mechanical Department, overall respondents was obtained that eL-LoS was indicating the students’ agreement that the activities of e-Learning were carried systematically and eL-LoS were enjoyable.

Item 4 attempts to assess the students’ perception on their interest in engineering studies via on line through the use of eL-LoS. Overall engineering students indicates that the eL-LoS increases the students’ interest in entering study cross over normal limintation (time and area).

Item 5 attempts to assess the students’ perception *of self-regulatory skills when using eL-LoS in crossover diciplines (four departments at PKB)*. Overall respondents was obtained which indicates that the eL-LoS helps in nurturing self-regulatory skills when studies in collaberative ways.

6.0 Conclusions

The purpose of this concept paper was to assess the importance and needs of eL-LoS development. The benefit of deveopment of eL-LoS focuses on lecturer note such e-Books to fill in at e-Library section on the program eL-LoS, otherwise the note such power point and short note from lecturer will fill in at media section that called Learning Object. The survey data’s also carry on to assess the needs of product eL-LoS refer to students’ perception for development of project eL-LoS. While the prototype of eL-LoS was completed, its will piloting among satff and engineering students to match with 21 century skilled and transfer knowledge.

This benefits will growth while eL-LoS was introduced as an eLibrary and ePnP at PKB web based. Though it is difficult to generalize the results due to the limited number of self-reported data with limitation of time survey. The exploratory study provides evidence and support for the adoption of eL-LoS match with online learning for polytechnic produce high expectation of engineering students needs for 21 century level in Technical and Vocational education.

References

- Abd. Rahim Abd. Rashid (2007). *Profesionalisme Keguruan: Prospek dan Cabaran*, Kuala Lumpur, Dewan Bahasa dan Pustaka.
- Abdul Ghafar Md Din (2003) *Prinsip dan Amalan Pengajaran*. Utusan Publications and Distributors Sdn. Bhd. Kuala Lumpur.
- Boekaerts, M., Pintrich, P. R., & Zeidner, M. (Eds.). (2000) *Handbook of Self-regulation*. San Diego: Academic Press.
- Brandi Allen (2006), *Self-Directed Learning for Middle School Students*, Johnston Middle School. <http://hti.math.uh.edu/curriculum/units/2006/03/06.03.01.php>
- Jeyagobi, R. dan Subramaniam, S. (2007). *Pembestarian Proses Pengajaran dan Pembelajaran*. Mahir Holdings Sdn. Bhd. Shah Alam .
- Kurubacak & Gulsun. (2007) *Promoting Self-Motivated Learning through Project Based Online Learning*. ERIC online submission. [abstract](#) and [pdf](#)
- Kamaruzaman Jusoff, Baharuddin Haji Abdul Rahman, Khairul Azhar Mat Daud and Nik Azida Abd Ghani (2010). "Motivating Students Using Project Based Learning (PjBL) via e-SOLMS Technology", *World Applied Science Journal* 8(9): 1086-1092, IDOSI Publications, 2010.
- Morsund & David (2002), *.Project –based learning: Usinag Information Technology, 2nd edition* , ISTE. ISBN 1-56484-196-0
- Md. Baharuddin Abdul Rahman, Khairul Azhar Mat Daud, Kamaruzaman Jusoff, Nik Azida Abd. Ghani. (2009). *Project based learning (PjBL) pratices at Politeknik Kota Bharu, Malaysia. International Education Studies*. 2 (4), 140-148
- Noor Azean Atan, Norah Md. Noor dan Mohd Fadzli Ali (2006) *Penerapan Kemahiran Generik Melalui Pembelajaran Aktif. Prosiding Konvensyen Teknologi Pendidikan ke-19 Reka Bentuk Pembangunan, Penggunaan dan Penilaian Teknologi Instruksional Jilid I, 9-11 September 2006. Awana Porto Malai, Langkawi, Kedah.*
- Synteta, P. (2002). *Project-Based e-Learning: The model and the method, the practice and the portal*. Unpublished PhD proposal (Accepted oct, 2002), University of Geneva, Geneva, Switzerland.
- Synteta, P. (2003). *Project-Based e-Learning and higher education: The model and the method, the practice and the portal*. *Studies in Communication, New Media in Education*. Pp. 263-269.
- Thomas, J. (2000). *A review of research on project-based learning*. Retrieved July 29, 2004 from <http://www.bie.org/tmp/research/researchreviewPBL.pdf>.
- Yang, H. (2001). *Mission possible: Project-based learning preparing graduate students for technology*. Retrieved August 29, 2004 . <http://www.msu.edu>.