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The Activeness of Interactions in Learning Management System and Students' Performances

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Interactions in LMS (learning management system) are needs in the implementation of online learning as a method for teaching and learning. A good performance in learning is a learner's dream. The purpose of this research is to identify the correlations between interactions and students performances. This research is worth to be studied due to several problems for implementation of online learning in the organisations, such as the lack of LMS tools usage amongst the lecturers and students in Higher Institution Education Organisation. Pearson Crostab descriptive analysis has been used to explain correlation between interactions and students performances. The Pearson Crostab descriptive analysis also could show the significant correlation between activeness interations and students performances. This finding also explains that even though LMS had been implemented and used, it still needs several components in order to help the teaching and learning process as well as improve the students performances.

Keywords: interactions, students performances, Pearson Crostab, LMS (learning management system)

Introduction

LMS (learning management system) is a system which is capable to pile up, manage and investigate online courses. LMS has been used in developing countries. More than 50 types of LMS have been developed (Mohamad Hisyam, 2000), such as WebCT (Web course tool), blackboard and top class. These are new technologies of inovation in Malaysia. Several higher institutions in Malaysia have implemented this system, such as USM (Universiti Sains Malaysia), UPSI (Universiti Pendidikan Sultan Idris), OUM (Open University Malaysia), UTM (Universiti Teknologi Malaysia), UM (Universiti Malaya) and IMU (International Medical University). Interactions in LMS are important, because if the lecturers or students lack of interactions with the tools in the LMS, they could not participate in the teaching and learning process. Interactions or interactivities provide various function in the education implementation (Anderson, 2003). Wagners (1994) defined interactions as an event that required two objects or two actions. Thurmond (2003) else defined that the learners' engagement with the course contents, other learners, the instructor and the technological medium used in the course contributed to the success of LMS implementation. True interactions between the leaners and the technology result in a reciprocal exchange of the information, which intends to enhance the knowledge development in the learning environment. In Malaysia, mostly higher institutions use LMS as a method for

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delivering the materials to the students which are not integrated as an important component in curriculum. That means no percentage of marks has been given by the lecturer to students if it used the LMS in the subject which has been taken. Therefore, this research is to explore and examine correlation between the activeness of the interaction and students performances which used LMS.

Literature Review

Garrison and Shale (1990) defined that all types of education including distance education were interaction between teachers, students and contents. Pallof and Pratt (1999) informed that key of learning was interaction between students and students, interactions between students and faculty and collaborative learning is produce from interactions. Moore (1989) said that there were three shapes of inteaction in distance learning, which were S-S (students-students), S-T (student-teacher) and S-C (students-contents). Anderson and Garrison (1998) again, added three more shapes of interaction. They were T-T (teacher-teacher), T-C (teacher-contents) and C-C (content-contents). Anderson (2003) clarified that there were six types or modes of interaction. The modes were S-S (students-students), S-T (student-teacher), T-C (teacher-contents), T-T (teacher-teacher), T-C (teacher-contents) and C-C (content-contents). Demsey and Ack (2002) explained that online interactions and interactivity helped actives learning. Dabbagh and Ritland (2005) explained that assyncronous system needed interactive activities, such as self-questions and refered to something else while the chat's room syncronous are more suitable for social discussions to change ideas but not suitable to form debates and treaty. Smith (1997) proposed that technology tools are able to integrate teaching and learning through several strategies. They are metacognitive strategy, cognitive strategy and social strategy or effective. Online learning has been used and impelemented in the developed countries. Performance, management and innovasion of online learning are main delivery methods to train the workers (Simmons, 2002). Garrison and Anderson (2003) explained about issues in organization where innovasion strategies, infrastructures and the leadership influence the implementation of e-learning. They found that there were various causes to complete the implementation of online learning or online interactions.

Methodology

The aim of the research was to determine the correlation between the activeness of interactions and student performances. This research has been conducted at Malaysia Higher Education Institusion which had been implementing LMS as a method into teaching and learning. Pearson Crostab descriptive analysis has been used to explained the correlation between the interactions and the students performances, because the tools could show clearly the different performances of interactions and the grades. Numeric data were gained from BLS (blackboard learning system) database which has been used by 80 students for engineering subject. The population was 120 students who have taken the subject. The samples was selected based on an activeness of students interactions in the LMS.

Findings

Excellent achievement is yearning for each students, who have been eveluated by their lecturers in several assesments, such as quizes, tests, assignments, projects and final examinations. The number of students registered by lecturer in BLS was 87. Figure 1 shows the grades and students percentage of the subject.

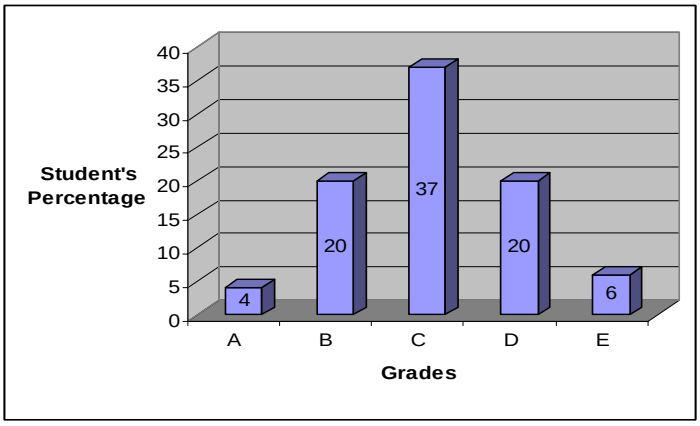

Figure 1. Grades and student's percentage.

Grade A refers to students who obtain grade A- or A; grade B refers to thoes students who to obtain grade B-, B or B+; grade C refers to students who obtain grades C-, C or C+; grade D refers to students who obtain grade D or D+, whereas the grade E refers to students who fail. The total marks of 85-100 enable a student to obtain the grade A, 80-84 are grade B, 75-79 are grade B+, 70-74 are grade B, 65-69 are grade B-, 60-64 are grade C+, 55-59 are grade C, 50-54 are grade C-, 45-49 are grade D+, 40-44 are grade D and 0-39 are grade E. Descriptive analysis Pearson Crosstab has been used to explain the correlations between activeness of interactions and students grades (see Table 1).

Table 1
The Correlations Between Activeness of Interactions and Students Grades

Grade	Activeness of interactions					Total
	1 (1,201-1,600 hit)	2 (801-1,200 hit)	3 (401-800 hit)	4 (1-400 hit)	5 (0 hit)	
A	1.2%	1.1%	2.3%	0.0%	0.0%	4.6%
B	0.0%	2.3%	2.3%	18.4%	0.0%	23.0%
C	0.0%	0.0%	9.2%	33.3%	0.0%	42.5%
D	0.0%	0.0%	1.2%	20.7%	1.1%	23.0%
E	0.0%	0.0%	0.0%	6.9%	0.0%	6.9%
Total	1.2%	3.4%	15.0%	79.3%	1.1%	100.0%

Notes. X^2 = 322.821; *df* = 316; *p* = 0.384; 1 = Very active student; 2 = Active student; 3 = Less active student; 4 = Not active student; and 5 = Very not active student.

Table 1 shows the correlation between activeness of interactions and students grades. Findings show that 4.6% of the students who obtain grade A interact with tools in BLS while 42.5% obtain grad C. Only 1.2% of the students to interact between 1,201 to1,600 hits. They have been categorized as VAS (very active student) to obtain grade A. Findings also show that 6.9% of the students who fail obtain grade E. There has been categorized as NAS (not active student) with interaction between 1 and 400 hits. Thirty-three point three percent of the students who are not active in the interaction obtain grade C. The 1.1% of the students who have not interacted in the subject obtains grade D. The Pearson test shows value X^2 =322.821821 (*df* = 316; *p* = 0.384) which is not significant at value of $p > 0.05$. It shows that there is no significant correlation between activeness of interactions and students grades.

Discussion

The findings show that there is no significant correlation between activeness of interactions and the students grade. The result does not mean that LMS which has been implemented is not helpful to achieve students' grade. There might be other factors which contribute to this correlation. This is suitable with the definitions of e-learning by Badrul Khan (2005). He said that e-learning embraced the pedagogical, technological, interface design, evaluation, managements, resource support, ethical and institutional. All of the terms are dimensions of e-Learning. The pedagogical dimension of e-learning refers to teaching and learning. This dimension addresses issues concerning content analysis, audience analysis, goal analysis, media analysis, designing approach, organization and learning strategies. The pedagogical dimension of e-learning examines issues of technology infrastructure in e-learning environments. This includes infrastructure planning software and hardware. The interface design refers to the overall look and feel of e-learning programs, which encompasses page and site design, content design, navigation, accessibility and usability testing. The evaluation for e-learning includes both assessment of learners and evaluation of the instruction and learning environment. The managements of e-learning refer to the maintenance of learning environments and distribution of information. The resource support dimension of the e-learning examines the online support and resources required to foster meaningful learning. The ethical considerations of e-learning relate to social and political influence, culture diversity, bias, geographical diversity, digital divide, etiquette and the legal issues. The institutional dimension is concerned with issues of administrative affairs, academic affairs and student services related to e-learning. LMS have many tools which can be used by the students and lecturers either as assyncronous or syncronous system. The student must use the tools the LMS's tools as a component for learning. Thereby, the students need to interact with the LMS's tools frequently.

Conclusions and Suggestion

Generally, the grade and the percentage of the students were normal. The students pass the subject even though they never interact. However, there are also students who fail the subject even though they interact with the LMS tools and several students who interact only have grade C. The Pearson Test shows that there is no significant correlation between activeness of interactions and the students' grades. This situation might be happened because of online learning instructional strategy, policy and regulation and contents in implementation of online learning, which covered the lecturer strategies to manage online learning sources, not have policy and regulation concerning about interaction in LMS, the contents of the learning materials and the contents of the interactions in the Discussion Board. Therefore, we suggest that the institutions have to create or to design a strategy in order to increase the student performance. The institutions must integrate the curriculum and online learning advantageously including giving more marks if the students have used LMS.

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