Integrating a Virtual Learning Environment in to First year Accounting Course Units:

Determinants of Overall Student Perception

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Abstract - With the evolution of the digital era, internet and eLearning tools have become more popularized among educational institutes. Educators in all over the world increasingly combine e-learning tools with traditional learning to enable a blended learning environment.

The purpose of this study is to evaluate the pedagogical effectiveness of the Virtual Learning Environment - VLE (Learning Management System – LMS) by ascertaining how first year students use this to accounting course units, and identifying student perception of the VLE as a learning tool. To conduct the study, we develop a standard questionnaire and distributed among first year students in Sri Lanka.

The survey was based on the VLE of the department of accountancy (LMS) and investigated four research questions. The initial sample size was 105 students and 103 responses were collected. The questionnaire consisted with five main sections. Further, six main VLE resources were used to measure the total influence on overall perception of students on VLE. A comprehensive descriptive analysis was conducted to measure the Overall usage of VLE (LMS) by students, while multivariate analysis was undertaken to investigate the main influential factors of students' overall perception on VLE.

According to the findings, three variables were identified as main influential factors for the overall perception of students; namely Lecture Notes, Announcements and Online Quizzes. And further it was evident that the high amount of student involvement and satisfaction towards the VLE as an interactive learning tool.

Keywords: Virtual Learning Environment, Accounting, Student Perception, Blended Learning

I.INTRODUCTION

Numerous novel tools and products have been developed with the growth of the internet in the early 1990s, in order to exploit the full benefits of the internet. The education community software products labeled Virtual Learning Environment (VLEs) have appeared since mid-1990s, with the aim of supporting teaching and learning activities across the internet. As per [1] VLE is a web based software system developed to facilitate learning and teaching with the use of tools and activities. Further, VLEs, identified as online systems supporting interactions between and amongst students and instructors as well as access to resources and activities, have been held to provide a range of benefits in higher education.

VLE represents one way of improving undergraduates' education which can be upgraded and VLE lectures can be offered by individuals with a recognized depth of knowledge. Further, effective application of this technology can benefit the education of students in programs ranging from high schools to community colleges to universities. As per [2] the technology relieves the instructor from being primarily responsible for delivering core content and enables the instructor to

use the physical schoolroom for engaging students in advanced level seminar-style discussions.

The internet offers such potential benefits as flexible access and new ways of communicating and assessing for students and lecturers. However, for the instructor, producing internet resources that are stimulating, appealing, stress-free to use and academically sound but it is time consuming and requires considerable expertise. VLEs permit instructor to produce lecture materials quickly and without the necessity of developing technical skills.

Typically Web-based, VLEs offer a combined set of internet tools, permit stress-free upload of materials and suggest a constant appearance and impress that can be modified by the user. Widespread marketable VLEs presently being used include Learning Management Systems (LMS), Blackboard and WebCT. Such VLEs are being used largely to the enhancement or sustenance the existing programmes as differed to deliver comprehensive online courses. According to the [3] the traditional educational system which was designed to teach students is not matching to present learners as they are not the people the as they dependent on communication technologies for accessing information and for interacting with others.

The selected educational institute in Sri Lanka introduced LMS in to their teaching and learning process in 2007 and since then department applies the integrated teaching and learning mechanism for their undergraduates. It is evinced that the results of this integrated teaching mechanism is successful, however no study is conducted to evaluate the perception of undergraduates on the applied mechanism. Thus there is a vital need to evaluate the success of this methodology. Accordingly, the current study evaluates the pedagogical effectiveness of Department of Accountancy's VLE the LMS by ascertaining how first year students use this learning tool, and identifying student perception of the VLE as a learning tool.

Thus the main purpose of this study it to identify the level of perception of first year accountancy undergraduates on integrating LMS in to their teaching and learning process. First year undergraduates of department of accountancy were considered for data collection and methodology follows the survey methodology applying descriptive analysis and multivariate analysis techniques.

II. SYSTEM MODEL

The study was conducted at a Sri Lankan university, which provides Bachelor of Business Management (Special) Degree in Accountancy for four (04) years including the core subject areas of Accounting, Finance, Economics, Management, Mathematics and Information Technology. This study was conducted to identify the major determinants of overall student perception on LMS as the VLE of the department which was introduced in the year 2007.

All undergraduates enroll to the accountancy degree programme are also enroll to the LMS from their first year, since they have been taught the fundamental of information technology course unit for forty five hours in the first semester which initiates the students to be familiar with computer literacy, internet, email, online learning technologies and use of the learning management system. Hence, three hours practical sessions are conducted for two separate groups of fifty students, in each week during the semester in order to enhance technical knowledge while receiving the involvement on the LMS. These sessions are conducted by lecturers who are savvy with information technology skills in the mode of two way interactive sessions in which undergraduates are actively communicating to the lecturers, responding to the raised questions and concurrently developing the information technology skills.

Further department of accountancy already integrated first year accounting subjects with information technology in the courses of 'IT Applications in Business' in first year first semester and 'Computerized Accounting' course in first year second semester. Accordingly all undergraduates essentially work with LMS in completion of said courses. Academic staffs of the department of accountancy are keenly motivating undergraduates by facilitating them by providing lecture notes and additional readings, online quizzes of all course units through the LMS. Teaching programme of all courses are designed to facilitate through LMS. Hence, teaching, learning and assessment of all first year courses of department of accountancy are conducted through the LMS.

In supporting the LMS, department of accountancy, itself owned a separate computer lab other than the faculty computer lab, with fifty computers and two technical officers. Therefore, there are adequate physical resources and human resources to integrate the LMS for all the course units of the degree. All undergraduates acquire a significant knowledge on working with LMS in their first academic year and it supports them to work successfully

with the LMS throughout four years of university education.

Hence, this study aimed to assess the effectiveness of integrating a VLE (LMS) in to first year accounting courses of the department of accountancy in determining its usage as a learning tool. Further it was aimed to identify undergraduate's perception of VLE (LMS) as a learning tool.

Following research questions were developed based on the objectives of the study.

1. Do undergraduates use the VLE (LMS) in their accounting courses?
2. At what extent undergraduates use the resources offered through the VLE (LMS)?
3. What are main factors namely,– provision of lecture notes, discussion forums, online quizzes, self- tests, announcements and other tools- which affect the undergraduates' overall perception of the VLE (LMS)?
4. To what extent is the perception of the LMS (as a VLE) driven by a lack of pre-requisite computing skills and limited access to technology by undergraduates?

The article is organized as follows. Section 2 describes the previous research findings on applying VLE on student learning process. Section 3 suggests the research methodology of the study. Session 4 discusses the findings of the study, while section 5 summarizes the conclusions of this study.

III. PREVIOUS WORK

Empirical evidence proposes that the usage of a VLE has an influence on student accomplishments, inspires self-governing learning and rises students' inspiration to learn [1]. The effectiveness of delivering the core curriculum of an introductory neuroscience course using a software application mentioned to as a virtual learning interlace was tested by [2] using five lecturers of an introductory course, Topics in Neuroscience, were used as the basis for this study and covered the next part of a semester-long, two credit course. Forty (40) students enrolled in this study were divided randomly into two groups of equal size. For the first half of the study, single group of students was instructed using the VLE, and the other group was instructed using a conventional lecture format. The performance of students in a VLE have compared with that of students in a conventional lecture hall in which the same lecturer presented the same material. Results of the study designate that average scores on weekly examinations were 14 percentage points higher for students in the VLE compared with those for students in a conventional lecture hall setting.

A VLE represents one way in which undergraduate education can be improved. VLE lectures could be offered by individuals with a recognized depth of knowledge. Further, effective application of this technology can benefit the education of learners in programs ranging from high schools to community colleges to universities. This technology relieves the lecturer from being primarily responsible for delivering core content and enables him to use the physical classroom to engage learners in higher level seminar-style discussions.

Later, [4] tried to improve an experientially fastened perspective on the implications of e-learning through a case study, informed by work on the Social Shaping of Technology (SST) that emphasized organizational, cultural, economic and other factors inducing the procedure of technological modification and innovation. They gathered responses from 225 individuals during the period of January to March 2002 including technical staff, administrators, instructors, students and other actors. Data was collected using a web-based questionnaire, asking for information such as participants' use of e-Class and their overall usage of personal computers and the Internet and trough training sessions and e-Class courses, enabling more participant to observation of these events. Results of this research depicts that VLE was highly valued by many users and used innovatively by a few and VLE was limited to uses that primarily supported traditional patterns of classroom instruction.

Further, [5] investigated the impact of features of an off the shelf LMS in teaching undergraduate accounting standards. They have done a questionnaire survey and found that design features most satisfying for these international cohorts are designed features relating to usefulness of lecture notes, availability of lecture notes, the use of bulletin boards and discussion forums and other LMS tools are universalistic and are positively related to students evaluation. [6] examined the computer reinforced cooperative learning and protracted the work debating the usage of players in online education. For this study they examined 300 Master of Business Administration (MBA) students in both on campus and online program a Western university. The results of the study indicate that not only the team work orientation and group cohesiveness predict student learning but also with group cohesiveness facilitating the association between teamwork orientation and student learning.

Accordingly teamwork orientation and group cohesiveness appear to be equally important predictors of team source learning.

The study conducted by [7] reported the usage of blackboard as a tool for creating a virtual learning environment. Responses from accounting undergraduates in New Zealand were considered for data on the use of the VLE as a learning assistance. Findings of their research suggested that undergraduates have flexibly comprised the VLE and support its implementation by faculty members in other courses. However, undergraduates seem reluctant to vigorously contribute in two-way online activities which has consequences for faculty anticipating the implementation of a VLE in their courses. In terms of overall perception of their findings, it was found that the use of the VLE had been a worthwhile involvement and that the integration of computers into the learning process aided student learning, staff and students became more accessible to each other, and there was a high level of support for the use of the VLE in other courses. Their findings were consistent with previous research that supports new and novel teaching approaches as techniques for stimulating learning. [8] conducted a case study based research aiming to integrate the use of IT with the development and application of management accounting techniques. The experience of both students and staff are analyzed for a period of six years. They received positive student response over a number of years suggesting that adopting a teaching approach which clearly combine theory with its application in practice. Further they could conclude that the suggested method enhance the student learning involvement at an introductory level.

Further, [9] found that learning approach implemented by the student often had an impact on their opinion of certain learning features of the platform. In their research they tried to establish the experience of VLE for students appearing traditional face to face courses in the subject area of operations management and assess the experience of a VLE among students studying course in operations management. Findings of empirical studies emphasis the importance of applying VLE into student teaching and learning process which enhances the quality of delivery while enhancing student performances.

IV. PROPOSED METHODOLOGY

The research paper sought to evaluate the effectiveness of the VLE by ascertaining how undergraduates use VLE as a learning tool in the accounting related course units and, to identify the student perception on the VLE as a learning tool. A survey was conducted during the second semester of the academic year 2015/16, among the first year undergraduates of a Sri Lankan university.

With reference to the research carried by [10] and [6], the survey instrument, questionnaire was developed and tested accordingly from a framework used in their studies and adapted for the present study with minor modifications, to seek information to evaluate the pedagogical effectiveness of Department of Accountancy's Virtual Learning Environment - VLE (Learning Management System – LMS) by ascertaining how first year students use this learning tool, and identifying student perception of the VLE as a learning tool. This study measures student overall perception on integrating the VLE to their learning process and the usefulness of the VLE. The Questionnaire devised to this study consisted of five main sections:

1. Demographic Background
2. Adoption and Usage of LMS in Course Units
3. Students perceptions of the usefulness of LMS
4. Students overall perception on LMS
5. Students overall perception on LMS driven by computer literacy skills and access to technology

Students were asked to provide their demographic profile under the first part of the survey instrument. Then, Respondents were asked to evaluate the usefulness of the VLE for the provision of lecture notes, discussion forums, online quizzes, self- tests, announcements and other tools used by the first year accountancy students influence their overall perception of the LMS. In each section, five point Likert-scale questions were organized and the undergraduates were asked to respond on a scale of 1 to 5 (where 5=Strongly Agreed). Furthermore respondents were given the opportunity to make 'additional comments' at the conclusion of these questions.

The lecture notes sub section which include in the third main section contained 2 questions, which specifically sought information relating to the availability of notes and other 5 questions were designed to ascertain whether the availability of these notes detracted from undergraduates learning and participation in the course. Questions under the discussion forums were designed to identify whether dialogue with academic staff and peers assisted in the learning process. In the self-test section one question related to the usefulness of the self-test and other three questions asked about the usefulness of self-test questions in learning process.

Questions under the announcements were sought to identify whether students considered this to be an

effective technique for communicating with the whole class. Questions related to online-quizzes sought to identify the usefulness of it in the learning process. Other tools referred basically to the availability of adequate amount of special web links and availability of email contacts of lecturers. The final section of the questionnaire consisted with five likert scale type questions to measure the Students' perception on LMS driven by computer literacy skills and access to technology. Further this section comprises with two open ended questions to provide overall suggestions for future improvements.

The questionnaires were distributed and collected during a lecture period to ensure a high response rate among those attending. The questionnaires were only distributed in printed form to avoid bias towards students who were more proficient and enthusiastic users of the VLE system. The instructions on the questionnaire advised the participating respondents that their responses would be accessible only for academic purpose to ensure the confidence and providing their name was not mandatory, thus confidentiality was ensured. The survey was carried out during the later stages of the second semester after students had been given adequate opportunity of using the VLE. Undergraduates were asked to provide responses on the basis of their experience in the accounting related subjected (IT Applications in Business, Financial Accounting, Financial Reporting Framework, and Computerized Accounting) of their first two semesters.

V. SIMULATION/EXPERIMENTAL RESULTS

The sample of the study was 105 enrolled undergraduates of the department of accountancy. Among them, 103 responses were collected during the lecture time, providing the overall response rate of 99%. The demographic profiles of the respondents can be summarized as per the table 1.

Age * Gender Cross tabulation

TABLE 1. Demographic Profiles

		Gender		Total
		Male	Female	
Age	20	4	2	6
	21	23	50	73
	22	14	7	21
	23	3	0	3
Total		44	59	103

Table I above shows the descriptive analysis on age and gender of the entire sample of respondents. The table depicts the age wise gender categorization. According to the table, there were 44 male respondents and 59 female respondents were contributed to the survey.

For the descriptive analysis researchers have selected second semester of 2015/2016 academic year. According to the user log reports generated from LMS, first year students' VLE participation for accounting subjects recorded as 17682 logs out of total 18459 logs. Balance 777 logs represent teacher logins to selected subjects.

Student logs under different activities explain that majority (6997) of logs are for resource view, which represents 39.6% of total student logs. Second highest interest of students is course view which consists of 5161 logs that is 29.2% of total student logs. Quiz continue attempts is the third highest interest of students which comprises 3574 logs and that is 20.2% as a proportion. Above findings revealed that, students use VLE to search learning material, and to view updates in the course units as the first priority and for online quizzes as required by the lecturers. Fig 5.1 displays the student logs for all activities in proportions.

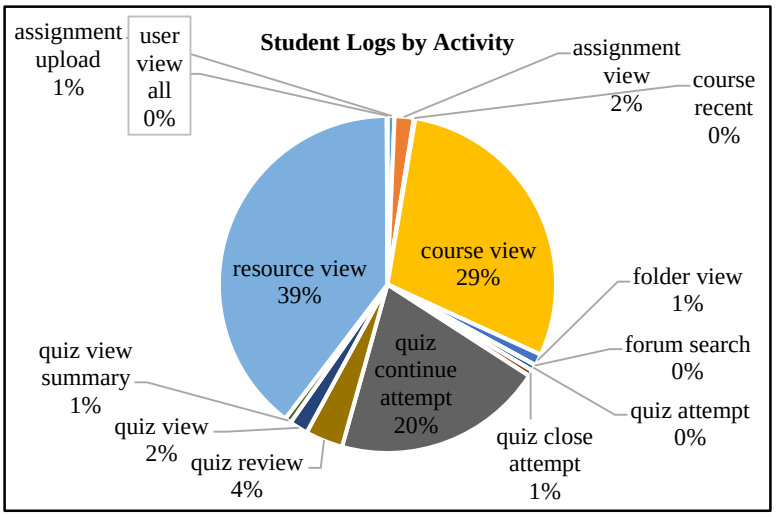

Fig 5.1. Student Logs by Activity

Logs comparison of four months (from September to December) of the semester could be used to identify trends in VLE usage of students. Based on the starting date of the semester, first month logs represent data from 26th September. Last month includes data till 15th December 2016 which is the log reports generated date. For an effective comparison daily average student log is calculated for each month. Output falls on a trend line which continuously boosts in the first three months and

falls in the last month. Table II shows the daily average logs and Fig 5.2 depicts the same in a trend line.

TABLE II. The Daily Average Logs

Month	Daily Average Usage
September	115
October	175
November	298
December	183

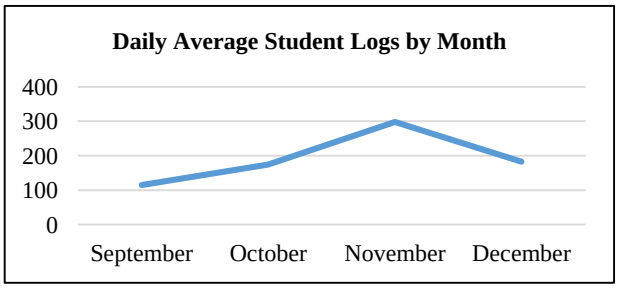

Fig 5.2. Daily Average Student Logs by Month

Analysis of logs by Day of the week expresses a considerable usage on Monday, which comprises 10840 logs or 61.3% of total logs. Second highest usage is on Sunday, which is 1794 logs or 10.1% of total logs. All other days of the week has a common usage pattern and no any significant fluctuation. Computerized accounting, a major accounting subject's lecture falls on Monday, which requires students to refer material on VLE and that could be the reason for unusually high logs on that day.

Fig 5.3 displays the student's usage of VLE by day of the week.

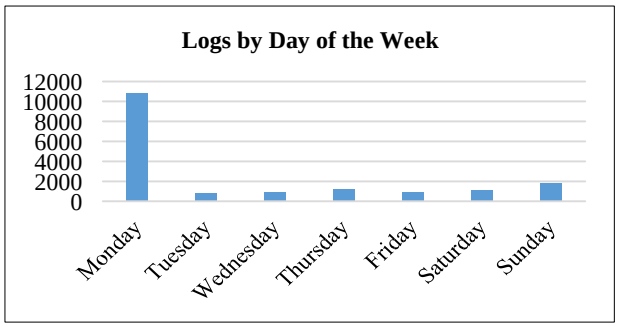

Fig 5. 3. Logs by Day of the Week

Descriptive findings were used to analyze the research question 1 of the current study; which is the usefulness of virtual learning environment to students in their programme of study.

TABLE III. Usage of VLE before join the University

		Frequency	Percent
Valid	Yes	34	33.0
	No	68	66.0
	Total	102	99.0
Missing	System	1	1.0
Total		103	100.0

Table III, displays the usage of VLE among students, before they join the University. Results indicated that, 66% from the total respondents did not engage in any VLE before, while balance 33% engaged in. Fig 5.4, 5.5, 5.6 and 5.7 illustrate the frequencies of main 4 factors to determine the overall perception of students; namely, Lecture notes available in LMS, Participation in discussion forums, Frequency of attaining Self-Tests and Frequency involved in online quizzes respectively.

According to the Fig 5.4, 49.5% of respondents mentioned that the lecture notes are available three times per week. Majority of students never engaged with Discussion Forums. According to the Fig 5.5, it is around 78%. Similarly, majority of students (51%) never attempted on Self-Tests questions (Fig 5.6), while majority of them (79%) attempted for online quizzes once in a week (Fig 5.7).

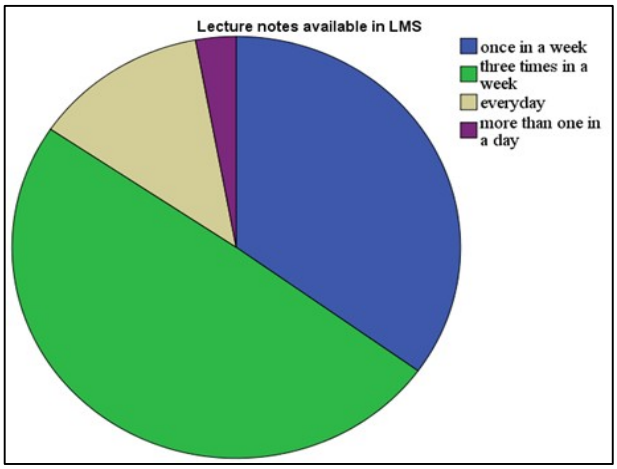

Fig 5. 4. Lecture Notes available in LMS

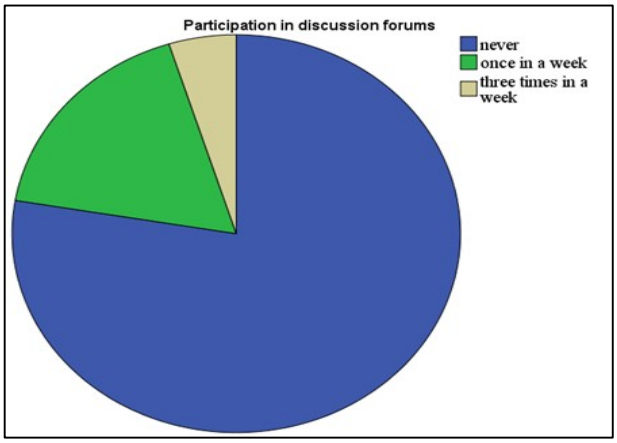

Fig.5.5. Participation in Discussion Forums

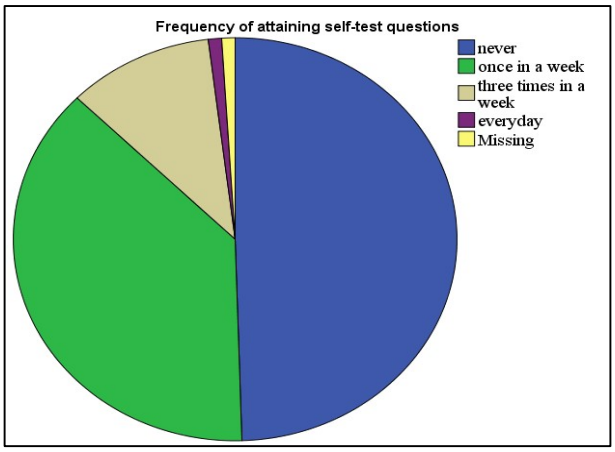

Fig 5.6. Frequency of attempting Self-Tests

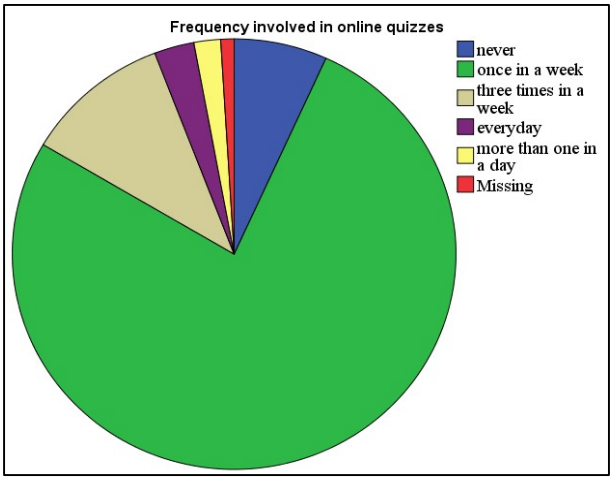

Fig 5.7. Frequency involved in online quizzes

TABLE IV. Overall Usefulness of VLE (LMS)

		Frequency	Percent
Valid	not at all	1	1.0
	small extent	8	7.8
	large extent	70	68.0
	very large extent	24	23.3
	Total	103	100.0

Table IV above, reflects the overall usefulness of the VLE to the study programme of first year accountancy students. It is evident that the usefulness of the VLE is 'large extent' and 'very large extent' among majority of the students in the sample. It was resulted over 91% from the total sample, which is very high value. According to the findings of descriptive analysis, we can conclude that the overall usefulness of the VLE is very high to the programme of study of first year accountancy students.

Multivariate analysis was conducted to evaluate the research question 3 of the study. The analysis conducted through two main stages using SPSS. As the first step, researchers conducted the exploratory factor analysis for the section 3 of the questionnaire, to measure the students' perception of the usefulness of the LMS. From the section 3 of the questionnaire, researchers seek which of the six variables – namely, the provision of lecture notes, discussion forums, online quizzes, self- tests, announcements and other tools - used by the first year accountancy students, influence their overall perception of the LMS. The main aim to conduct the exploratory factor analysis was to reduce number of items in to specific factors [11]. Then the reliability analysis was conducted on derived specific factors using the Cronbach alpha analysis. As the second step of the analysis, the regression analysis was conducted to identify the relationship between refined factors and the overall perception of students on LMS.

As mentioned by [11], it was assumed that the technique would be applied to the entire population of interest. And further, he mentioned that, when these methods are used, conclusions are restricted to the sample collected and generalization of the results can be achieved only if analysis using different samples reveals the same factor structure. So, the exploratory factor analysis was undertaken, to determine the correlation among variables. Only the latent variables of the survey instrument were considered, using principle component analysis (principal axis factoring) with varimax rotation.

The Kaiser-Meyer-Olkin (KMO) Test and the Bartlett's Test of Sphericity , provide a minimum standard which should be passed before a factor analysis (or a principal components analysis) [11]. The KMO test basically measures the sample adequacy for each variable and for the entire model, while the Bartlett's Test of Sphericity relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study. For Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05[11].

TABLE V. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.728
Bartlett's Test of Sphericity	Approx. Chi-Square	1317.885
	Df	276
	Sig.	.000

Table V shows the results of KMO and Bartlett's Test. According to the above table, the value of the KMO measure is 0.728, which is greater than 0.7 indicates that the existence of the sample adequacy. The Bartlett's test is another indication of the strength of the relationship among variables. This tests the null hypothesis that the

correlation matrix is an identity matrix. So we want to reject the null hypothesis. According to the table V, the Bartlett's Test of Sphericity is significant, and accordingly we can reject the null hypothesis. So, the validity and suitability of the responses collected are also existed with the sample. According to [11], communalities should be in the 0.5 range for samples between 100 and 200. Accordingly, due to the low extraction values of communalities in SPSS, six items were removed from further analysis. Namely, Affects to absenteeism of students, Participation on the course unit, Difficulties of doing online quizzes, Availability of contact details of lecturers, Interact with other students and contribution to the final marks.

According to the results of the rotated factor matrix, altogether seven factors were identified and extracted for the further analysis. So, the subsequent regression analysis was conducted using the above mentioned seven variables; namely, , the provision of lecture notes, discussion forums, online quizzes, self- tests, announcements , other tools (independent variables in the regression analysis) and overall perception(dependent variables in the regression analysis).

To measure the internal consistency or the reliability of the extracted factor variables, cronbach alpha measure was used.

TABLE VI. Cronbach Alpha Values

Factor	Cronbach Alpha
Lecture Notes	0.838
Discussion Forums	0.719
Self-test Questions	0.911
Announcements	0.759
Online Quizzes	
Other Tools	
Overall Perception	0.777

According to the Cronbach Alpha values showed in the table VI, all the values are greater than 0.7 indicated that the availability of internal consistency among factor variables [12]. Cronbach Alpha was not reported for factors, Online Quizzes and Other Tools due to single item measures.

Table VII displays the Pearson correlation coefficients between all eight identified factors, including the overall perception. According to the results, all variables were recorded with small correlations, indicates that the unavailability of multicollinearity problem [11

TABLE VII. Inter Factor Correlations

	Lecture Notes	Discussion Forums	Self-Tests	Announcements	Online Quizzes	Other Tools	Overall Perception
Lecture Notes	1	0.2	0.276	0.517	0.242	0.425	0.595
Discussion Forums	0.2	1	0.354	.066	.080	0.224	.167
Self-Tests	0.276	0.354	1	0.237	0.243	0.208	0.328
Announcements	0.517	.066	0.237	1	.193	0.244	0.531
Online Quizzes	0.242	.080	0.243	.193	1	0.204	0.335
Other Tools	0.425	0.224	0.208	0.244	0.204	1	0.356
Overall Perception	0.595	.167	0.328	0.531	0.335	0.356	1

]. The inter factor correlation figures for multicollinearity measure were confirmed by the Tolerance level and VIF values in the table X. Tolerance levels for all factors were reported as greater than 0.2, while VIF values for all factors were reported as less than 5. According to [12], threshold values for both Tolerance level and VIF factor are greater than 0.2 and less than 5 respectively

.

Regression analysis was undertaken to measure the way of predicting the outcome variable (overall perception) from six other predictor variables [11].

TABLE VIII. Regression Analysis - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687a	.471	.438	.30480

a. Predictors: (Constant), Other Tools, Online Quizzes, Discussion Forums, Announcements, Self Tests, Lecture Notes

Table VIII above, shows the model summary of the multiple regression analysis. According to the R2 value, 47.1% of variance in the overall perception can be explained by the other six selected factors (independent variables). The modified version of R2 that has been adjusted for the number of independent variables is called adjusted R2 and the recorded value was 43.8%.

TABLE IX. Regression Analysis - ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.952	6	1.325	14.265	.000b
	Residual	8.919	96	.093		
	Total	16.870	102			

a. Dependent Variable: Overall Perception
b. Predictors: (Constant), Other Tools, Online Quizzes, Discussion Forums, Announcements, Self-Tests, Lecture Notes.

According to the ANOVA table depicted in the table IX above, the F value of 14.265 is statistically significant. So the regression model overall predicts the dependent variable; overall perception, significantly.

Table X illustrates the standardized coefficients (beta values), t statistics and associated p values.

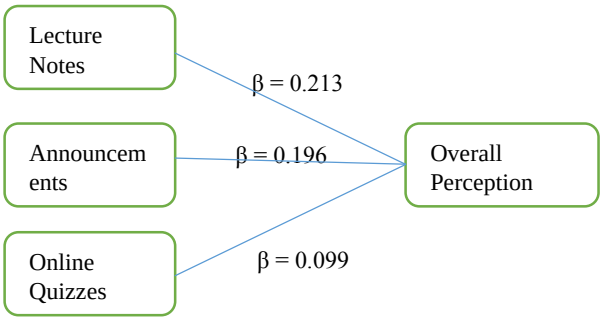

Fig 5.8. Impact of significant variables to the overall perception

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.671	.315		5.306	.000		
	Lecture Notes	.213	.058	.347	3.670	.000	.614	1.628
	Discussion Forums	.006	.050	.010	.120	.904	.841	1.190
	Self Tests	.050	.039	.108	1.295	.198	.788	1.269
	Announcements	.196	.063	.274	3.125	.002	.715	1.399
	Online Quizzes	.099	.051	.154	1.961	.053	.895	1.118
	Other Tools	.043	.042	.085	1.022	.309	.788	1.270

TABLE X. Regression Analysis - Coefficients
a. Dependent Variable: Overall Perception

According to the results, three variables; namely Lecture Notes, Announcements and Online Quizzes are statistically significant, while Discussion Forums, Self Tests and Other Tools are statistically insignificant. The multiple linear regression equation can be written as follows.

Overall Perception = 1.671 + 0.213 (Lecture Notes) + 0.196(Announcements) + 0.099(Online Quizzes) + ei ……. (1)

According to the equation 1, highest magnitude of the coefficient is 0.213. Which is the coefficient value of the lecture notes, indicates that the highest effect to the overall perception of students. Other two variables; namely, Announcements and Online Quizzes recorded next highest values respectively and contribute to the overall perception of students accordingly. The impact of above three variables on overall perception of students is illustrated in Fig 8.

The final part of the questionnaire was to measure the Students' perception on LMS driven by computer literacy skills and access to technology. The session consisted with five questions with five scale Likert scale to rate their opinion. Table XI below shows the mean score for the above mentioned five questions.

TABLE XI. Computer Literacy Skills and access to Technology

N	Valid	103
	Missing	0
Mean		3.7612

The mean score for this session was 3.76, which was close to 4; hence indicating that the majority of the respondents

'agree' to the questions in the session. Table XII demonstrates the average result for each individual question as "Agree".

TABLE XII. Ability to use VLE as a result of Computer Skills and access to Technology

Prior computer literacy is essential to use LMS.	Agree
High amount of computer resources are essential to use LMS.	Agree
You are getting a proper training on LMS from the course lecturer.	Agree

Proper infrastructure facilities are available for students to use LMS. (Computer Labs, Internet access facilities, etc.)	Agree
VLE is reliable in the learning and evaluation process.	Agree

VI. SUMMARY AND CONCLUSION

The main objective of this study was to determine the overall student perception on integrating a Virtual Learning Environment in to first – year accounting course units. To conduct the study, we develop a standard questionnaire and distributed among first year students in a Sri Lankan university. To measure the usefulness and the overall perception, we used accounting related course units. The sample size was 105 students and 103 responses were collected. The questionnaire consisted with five main sections. Further, six main VLE resources were used to measure the total influence on overall perception of students on VLE. Those six resources were, provision of lecture notes, discussion forums, online quizzes, self- tests, announcements and other tools.

According to the findings, three variables were identified as main influential factors for the overall perception of students; namely Lecture Notes, Announcements and Online Quizzes. These three variables had a positive significant relationship on overall perception of students on VLE. These results were further confirmed by the descriptive results. According to the student log analysis of the LMS, most number of logs were for resource view, course view and quiz attempt respectively.

Logs comparison of four months (from September to December) of the last semester was used to identify trends in VLE usage of students, by month and the day of the week. Accordingly, the highest number of student logs were recorded in the month of November and Monday. The main reason for the highest number of student logs to the VLE on Monday is that the selected computerized accounting course unit was fallen on every Mondays. Results suggest that the student involvements to discussion forums should be further enhanced and it should be improved as an interactive learning tool among students and lecturers. In addition, one further explanation for the lack of usage of ‘other tools’ is that, unavailability of different tools. Lecturers should provide a platform to use more other tools like, WIKIs, Chat sessions, Glossaries, external tools, Questionnaires (to gather student data) and so on.

A comprehensive descriptive analysis was conducted to measure the Overall usage of VLE (LMS) by students. It was evident that the usefulness of the VLE is ‘large extent’ and ‘very large extent’ among majority of the students in the sample. It was resulted over 91% from the total sample.

To measure the final or the fourth research question, we used final section of the research instrument with 5 likert scale questions. According to the results, majority of the respondents ‘agreed’ with questions in the section 4, to measure the Ability to use VLE as a result of computer skills and access to technology. So majority of the respondents, believed that, they should have prior computer literacy and High amount of computer resources to access LMS. They further believed that they are getting a proper training on LMS from the course lecturer and proper infrastructure facilities are available them to use LMS, such as Computer Labs and Internet access facilities, hence most of them were ranked LMS as a reliable tool in learning and evaluation process. Overall, the findings of this study show, the high amount of student involvement and satisfaction towards the VLE as an interactive learning tool. They further requested from open ended questions, to available more additional readings and to upload lecture materials prior to the lecture session.

One of the main limitations of the current study was the limited number of participants (103). Involvement of more participants would always provide better and meaningful results. The research findings of the current study provide number of opportunities for future research. One is to evaluate the influence of VLE to the final grade of the students. Second, future researchers can expand the sample to all four years and go for more comprehensive analysis. And also researchers can investigate student log reports using advance data mining tools to identify hidden patterns and accordingly they can suggest new pedagogical approaches for integrated learning.

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