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Attitudes towards Developing E-portfolio as an Extension for Personal Learning Environment of Universities in Sri Lanka

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Abstract

The study on the attitudes towards developing e-portfolio as an extension for Personal Learning Environment of Universities in Sri Lanka is aimed at energizing students to be actively involved in learning culture, assess students regularly, and predict final results to maintain the effective and efficient two-way flow of information. An electronic portfolio is a collection of electronic evidence assembled and managed by a user, usually on the Web. The study mainly emphasizes the attitudes of the main stakeholders of the e-portfolio, such as Administrators, Academic Staff Members, and Undergraduates. The study is conducted as a case study at the University of Kelaniya, Sri Lanka, using convenience sampling method. The questionnaire method is used to collect data and descriptive analysis and bivariate analysis are used to analyze data and graphical methods and equations have been used to present the gathered data. The study is concluded with positive opinions from administrators, academic staff members, and undergraduates while designing an e-portfolio for the university system. The system flowed with the feasibility study and requirement analysis, which are driven by the development of the e-portfolio. The e-portfolio system design, which consists of system architecture, database, and system design, is illustrated in the study. Finally, the study proposed to develop the e-portfolio as an extension for personal learning which, already exists in the university context in Sri Lanka.

Keywords: *Education, E-Portfolio, Personal Learning Environment, Student Involvement*

Introduction

The World Wide Web (WWW) has made access to information and the distribution of educational material, content accessible to an outsized fraction of the world's population and helped move distance learning to the digital era. Distance Learning has become gradually common in many universities worldwide (Allen & Jeff Seaman, 2017).

An electronic portfolio is a web-based assembly of electronic evidence gathered and proceeded by a user. Electronic evidence can be known as input text, electronic files, images, multimedia, blog entries, and hyperlinks, where e-portfolio emphasized not only accessing study materials but also evaluating and monitoring performance too.

"The institution should be held responsible for providing the most favorable condition to promote the active participation of students through programmes and policies that encourage responsible student behavior" (Tam, 2002). Also, the institution is responsible for providing the environment and support to engagement and students must have the responsibility for their own engagement with the e-portfolio. The ending phase aimed at an effective e-portfolio practice which can also be an appraisal process that evaluates the implementation process and outcomes of the e-portfolio (JISC, 2008). Considering the University of Kelaniya, which is considered as the target

population of this research, is practicing the Learning Management System (LMS) in the university. But the most common complaint from the academic staff members is, activities on LMS needs further follow-ups to get the involvement of the students on it such as if they upload any assignment to LMS, most of the students are unaware about the assignment and then lectures have to pass a message separately to get students' attention. Students also do not pay much attention as the activities on LMS do not impact directly on their final results at the end semester examination and student users are confused about the procedure (Rasmussen, 2016) (Connect Thinking, 2013). Therefore, it is essential to develop a platform where all the stakeholders are equally involved and equally beneficial. The e-portfolio is a high concept in foreign countries that requires an appropriate procedure to be developed in a country like Sri Lanka as people restrict to change suddenly.

The research questions can be listed as follows;

1. How about the institutional commitment towards the initiation of e-portfolio?

2. What are the student and academic staff attitudes towards making for Personal Learning Environment?

3. What are the factors that impact designing culturally responsive e-portfolios?

4. How the identified factors can be used to design and develop e-portfolios?

The General Objective of the study is to energize students to be actively involved in learning culture, assess students regularly, and predict final results to maintain an effective and efficient two-way flow of information. Thereby, the specific objectives of the study are to ensure the institutional commitment towards initiation of e-portfolio to get the maximum involvement of learners, to confirm an attitude towards making for personal Learning Environment in order to ensure active contribution, scaffolding, evaluate and monitor the performance of mentors and also ensure the active contribution of a learner, to ensure factors affecting designing cultural e-portfolio in order to understand the factors final implementation, to assess students regularly and predict final results with assignments to offer them a brief understanding about the final results.

Review of Literature

The education system is encountered a rapid change due to its arising challenges and technological development. The education system requires to produce more competent learners who are capable of handling any situation in the working environment. The demand for comprehensive education and the increase of the rate of migration energizes the positive expands to the existing learning environment by modern learning theories, new educational concepts, and technological enhancements (Hubwieser & Böttcher, 2015). The recent education system evaluation was through the Classroom Approach (CRA) via Personal Learning Environment (PLE) to the current scenario with e-Learning procedure. The designs of traditional CRA and the online course or PLE are not with similar characteristics. According to (Wright, 2014), there can be many differences between the learning outcomes of CRA and PLE. However, with the growing requirements of the job market and the working environment, the educational pedagogical procedure needed to be changed virtually with emerging necessities of technology in the perception of the global village. According to (Abrami, et al., 2008), among the most interesting and exciting new developments of the education system are electronic portfolios, not only because they act as multimedia containers for students and teachers but also because they support student self-regulation and core educational competencies, especially literacy skills.

The PLE has failed to engage learners and staff honestly to the system in terms of learning and evaluating meaningfully (Abrami, et al., 2008). They suggest that one way to meet the challenge is to apply the use of electronic portfolios (EPs) that can be designed to support the process of students' self-regulated learning and the improvement of reading, writing, and other literacy skills and they define self-regulated learning as a set

of behaviors that are used to guide, monitor and evaluate the success of one's learning. An electronic portfolio is a collection of electronic evidence assembled and managed by a user, usually on the Web. Such electronic evidence may include input text, electronic files, images, multimedia, blog entries, and hyperlinks where e-portfolio emphasized accessing study materials and evaluating and monitoring performance.

Methodology

The e-portfolio design research described the potential implementation of e-portfolio as an extension for the Personal Learning Environment of Universities in Sri Lanka. However, the study focuses on replacing the personal learning environment with an effective learning environment through the e-portfolio in the Sri Lankan university context. The type of the study is correlational as the study establishes a relationship between independent and dependent variables and the study conduct in the natural environment of the institution while minimizing the researcher influence to the natural flow (Sekaran, 2009) (Hussey & Hussey, 1997). The study formulated three main hypotheses in order to identify the nature of certain relationships between the dependent and independent variables. Thereby the study is analytical in nature. The study setting of the research study is field study. It emphasized establishing relationships between independent and dependent variables at the natural atmosphere to the research or in other words at target study context.

The study population comprises of administrators, students and academic staff members in Sri Lankan Universities. But the university of Kelaniya was selected as the case to the study due to the constraints of time and resources and the convenience of handling the research study. More specifically, the population consists of approximately 100 administrative parties or decision makers, 550 academic staff members and 9900 students in the university. Thus, a sample of 364 was drawn using the convenience sampling method and it comprises of 11, 33, and 320 for administrators, academic staff members and students respectively.

In this sense, questionnaire method is fairly sufficient in collecting data from stakeholders of the study as the primary data collection method. The questionnaire consists of general information and qualitative information or perception of relevant stakeholders regarding the implementation of e-portfolio as an extension to the Personal Learning Environment. Secondary data sources also used where such documents support the contemporary environment of personal learning and potential to e-portfolio as a method of data collection. Data for the independent variables, or in other words, the perception of administrators, academic staff members, and students were measured ordinal with Likert scale measurement.

To achieve the objectives of the study, the analysis of data consists of two parts as descriptive analysis and advanced analysis. The descriptive analysis consists of the analysis of frequency distribution, and percentages and, at the same time, bivariate analysis involves chi-square analysis in finding relationships between independent and dependent variables. SPSS version 22.0, and Microsoft Excel 2013 were used to test the hypotheses, and analyze the data set.

The study has constructed three main hypotheses as follows.

H0 1: There is no significant relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to personal learning environment.

H1 1: There is a significant relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment.

H0 2: There is no significant relationship between attitudes of academic staff members and intention to implement e-portfolio as an extension to the personal learning environment.

H1 2: There is a significant relationship between attitudes of academic staff members

and intention to implement e-portfolio as an extension to personal the learning environment.

H0 3: There is no significant relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

H1 3: There is a significant relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

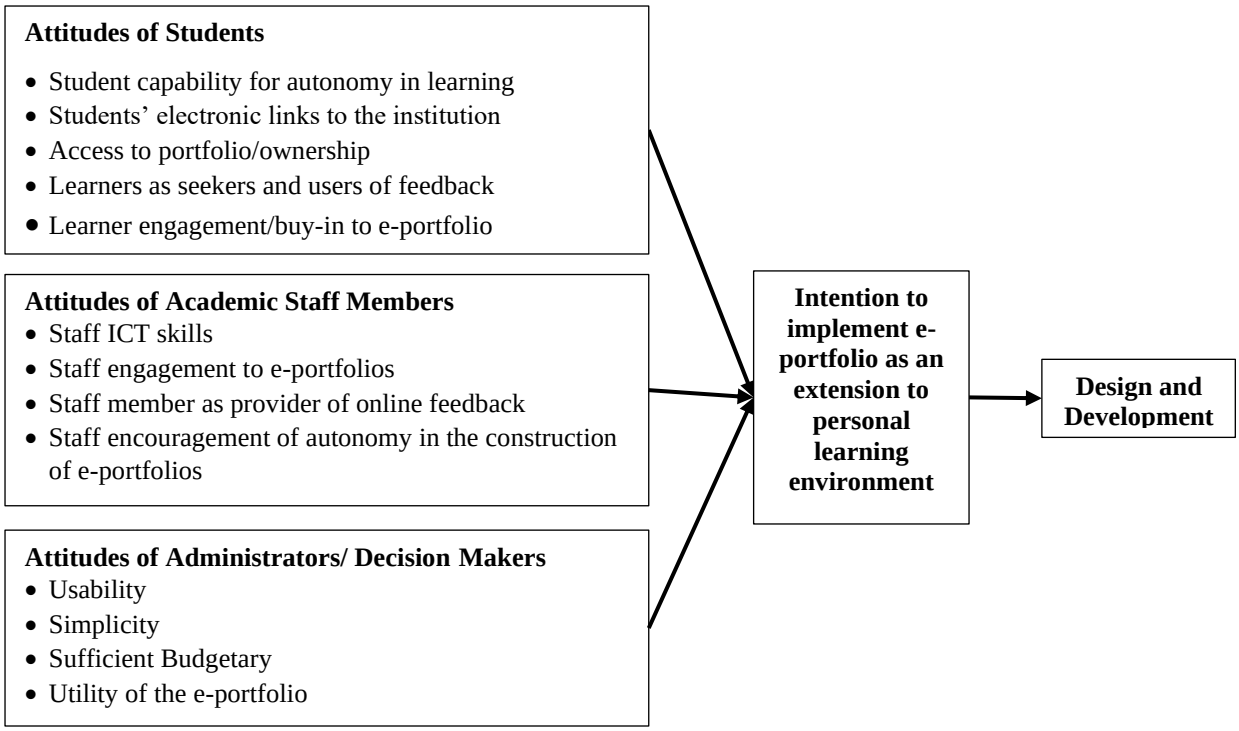

Figure 1: Conceptual Framework
Source: Author Developed (2018)

Data Analysis

When considering the sample profile of the undergraduates, it shows that there are 87 percent of female undergraduates and 13 percent of male undergraduates. Among them, the undergraduates' composition of faculties implies that the majority of undergraduates are from the Faculty of Social Sciences, where it records 43 percent out of the total and the least representation is from the Faculty of Medicine, which records only 1 percent. However, the Faculty of Commerce and Management, Faculty of Humanities, Faculty of Science and Faculty of Computing and Technology representation report 30 percent, 19 percent 6 percent and 3 percent respectively. However, the language preference of undergraduates implies that 81 percent of the total population prefer English language as the language for e-portfolio and another 19 percent prefer Sinhala Language.

On the same time when considering the gender composition of academic staff of the study, it consists of 50 percent females and 50 percent of males. The academic staffs' composition of faculties implies that the majority of members are from the Faculty of Social Sciences where it records 24 percent out of the total and the least representation is from the Faculty of Medicine, Faculty of Humanities, and Faculty of Computing and Technology which are records 9 percent each. However, the Faculty of Commerce and

Management representation recorded 34 percent. The language preference of academic staff members implies that 100 percent academic staff members prefer English language as the language for e-portfolio.

Also, the gender composition of administrator of the study consists of 46 percent females and 54 percent of males. The administrators' composition of Faculties implies that majority of members are from the Faculty of Science where it records 46 percent out of the total. However, the Faculty of Commerce and Management, Faculty of Humanities, Faculty of Social Sciences, and Faculty of Medicine representation records 18 percent, 9 percent respectively. When considering the language preference of administrators, it implies that the majority of administrators prefer English language as the language for e-portfolio which is recorded as 73 percent and the remaining administrators prefer Sinhala Language.

On the other hand, the study considered the dependent variable as the intention to implement e-portfolio as an extension to the personal learning environment by undergraduates, academic staff members and administrators. The dependent variable was measured along with nine statements regarding the intention to implement e-portfolio and constructed an index in order to perform the chi-square test to see the relationship between the attitudes of stakeholders towards e-portfolio and the intention to implement e-portfolio as an extension to personal learning environment.

Testing Hypothesis

Relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment.

H0 1: There is no significant relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment.

H1 1: There is a significant relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment.

The chi-square table for the index constructed for both individual variable and the dependent variable or in other words for attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment shows that the significant value of the chi-square table is 0.000 which is less than 0.05 level of significance. Thereby the study concludes that there is a significant relationship between attitudes of institutors/ decision-makers and intention to implement e-portfolio as an extension to the personal learning environment.

Relationship between attitudes of academic staff members and intention to implement e-portfolio as an extension to personal learning environment.

H0 2: There is no significant relationship between attitudes of academic staff members and intention to implement e-portfolio as an extension to the personal learning environment.

H1 2: There is a significant relationship between attitudes of academic staff members and intention to implement e-portfolio as an extension to the personal learning environment.

The chi-square table for the index constructed for both individual variable and the dependent variable or, in other words, for attitudes of academic staff members and intention to implement e-portfolio as an extension to personal learning environment shows that the significant value of the chi-square table is 0.000, which is less than 0.05 level of significance. Thereby the study concludes that there is a significant relationship between attitudes of academic staff members and intention to implement e-portfolio as an extension to the personal learning environment.

Relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

H0 3: There is no significant relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

H1 3: There is a significant relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

The chi-square table for the index constructed for both individual variable and the dependent variable or, in other words, for attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment shows that the significant value of the chi-square table is 0.06 which is greater than 0.05 level of significance. Thereby the study concludes that there is no significant relationship between attitudes of undergraduates and intention to implement e-portfolio as an extension to the personal learning environment.

Table 1: Attitudes of undergraduates towards e-portfolio

	Strongly Agree %	Agree %	Moderate %	Disagree %	Strongly Disagree%
Student capability for autonomy in learning	35.15%	58.75%	5.5%	0.45%	0.15%
Students' electronic links to the institution	36.45%	50.3%	9.05%	4.05%	0.15%
Access to portfolio/ownership	40.87%	48.83%	6.77%	3.1%	0.43%
Learners as seekers and users of feedback	26%	61%	9%	4%	0.00%
Learner engagement/buy-in to e-portfolio	37.87%	52.93%	8.07%	0.73%	0.4%

Source: Sample survey (2018)

Table 2: Attitudes of academic staff members towards e-portfolio

	Strongly Agree %	Agree %	Moderate %	Disagree %	Strongly Disagree%
Staff ICT skills	50%	31.7%	18.3%	0.0%	0.0%
Staff engagement to e-portfolios	16.65%	51.7%	31.65%	0.0%	0.0%
Staff member as provider of online feedback	45.5%	26.7%	7.8%	20%	0.0%
Staff encouragement of autonomy in the construction of e-portfolios	25%	21.65%	48.3%	5%	0.0%

Source: Sample survey (2018)

Table 3: Attitudes of administrators towards e-portfolio

	Strongly Agree %	Agree %	Moderate %	Disagree %	Strongly Disagree%
Staff ICT skills	50%	31.7%	18.3%	0.0%	0.0%
Staff engagement to e-portfolios	16.65%	51.7%	31.65%	0.0%	0.0%
Staff member as provider of online feedback	45.5%	26.7%	7.8%	20%	0.0%
Staff encouragement of autonomy in the construction of e-portfolios	25%	21.65%	48.3%	5%	0.0%

Source: Sample survey (2018)

Table 4: Summary of intention to implement e-portfolio as an extension to personal learning environment

	Easy to Use	Uploading Files	Accessing Files	Viewing and Commenting	Image editing	Integration	Access after graduation	Peer Feedback	Online editing
Undergraduates' intention to implement e-portfolio									
Strongly Disagree	0.0%	0.0%	0.0%	0.0%	.6%	.3%	0.0%	0.0%	0.0%
Disagree	.3%	0.0%	0.0%	.6%	8.4%	5.2%	3.5%	0.0%	2.6%
Moderate	2.3%	4.2%	6.8%	8.7%	20.0%	17.4%	9.0%	5.2%	7.7%
Agree	59.0%	59.0%	57.7%	56.1%	52.9%	50.3%	49.7%	59.0%	57.1%
Strongly Agree	38.4%	36.8%	35.5%	34.5%	18.1%	26.8%	37.7%	35.8%	32.6%
Academic Staff Members' intention to implement e-portfolio									
Strongly Disagree	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Disagree	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Moderate	6.7%	6.7%	3.3%	3.3%	26.7%	3.3%	20.0%	10.0%	10.0%
Agree	30.0%	36.7%	33.3%	50.0%	50.0%	46.7%	76.7%	60.0%	40.0%
Strongly Agree	63.3%	56.7%	63.3%	46.7%	23.3%	50.0%	3.3%	30.0%	50.0%
Administrators' intention to implement e-portfolio									
Strongly Disagree	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%
Disagree	9.1%	9.1%	9.1%	10.0%	9.1%	9.1%	9.1%	9.1%	0.0%
Moderate	9.1%	9.1%	9.1%	20.0%	18.2%	18.2%	18.2%	9.1%	9.1%
Agree	36.4%	63.6%	54.5%	40.0%	54.5%	54.5%	36.4%	54.5%	36.4%
Strongly Agree	45.5%	18.2%	27.3%	30.0%	18.2%	18.2%	36.4%	27.3%	45.5%

Source: Sample survey (2018)

CONCLUSION

The conclusion of the study follows along with the conceptual framework constructed at the methodology. With reference to the conceptual framework firstly, the study concludes the attitudes of undergraduates towards e-portfolio development.

Student capability for autonomy in learning - the analysis of the study could conclude that there is more than 90 percent of undergraduates agreed or strongly agreed with both the statements e-portfolio emphasize the importance of self-direction in learning, and e-portfolio emphasize the accessibility anywhere.

Students' electronic links to the institution – more than 85 percent of undergraduates report agreed and strongly agreed in this regard. Smilarly, there is a considerable percentage of disagreement with the statement regarding undergraduate's links to the institution electronically which is numerically 1/20 from the total. Thereby the policymakers should consider establishing a suitable procedure to enhance undergraduate commitment through electronic mediums.

Access to portfolio/ownership - as it covers more than 85 percent of the undergraduates with a positive opinion towards accessibility of e-portfolio. And on the other hand, there could be seen a significant percentage of undergraduates, nearly 1/20, who are disagree with the accessibility of e-portfolio. Therefore, the policymakers should keen on providing required security and accessibility to the undergraduates in the form of ownership to the respective e-portfolio.

Learners as seekers and users of feedback - the responses in this regard could be concluded with the agreement of more than 85

percent of undergraduates, but there is a considerable percentage of undergraduates with no opinion towards feedbacks via e-portfolio. Therefore, these criteria should also be taken into high consideration where this is important for the development of the e-portfolio in advance.

Learner engagement/buy-in to e-portfolio - There is nearly 90 percent of undergraduates who are either agree or strongly agree with these supplementary statements. Also, it could be seen nearly 10 percent of moderate opinion that who are not clear about the amount of their engagement to the e-portfolio. Thereby the policymaker should consider managing learner engagement in both in favor of the institution and learner.

The next main stakeholder of the e-portfolio is academic staff members who should take the initiative for the e-portfolio procedure.

Staff ICT skills - The results could be concluded as there is more than 80 percent of academic staff members with the confidence of having ICT skills required to collaborate with e-portfolio. And at the same time, there is nearly 20 percent of academic staff members require further guidance towards ICT skills to be actively involved in the e-portfolio procedure. Therefore, the administrators should establish formal training on ICT skills required to e-portfolio to all academic staff members according to the level of their knowledge and skills.

Staff engagement to e-portfolios - The analysis could be concluded that there is more than 65 percent of academic staff members with the opinion of agreeing or strongly agree with engagement to e-portfolio, but there is a highly considerable percentage of academic staff members with moderate opinion towards the same. They could be identified as persons with an unclear opinion on the amount of engagement towards e-portfolio and thereby the policymakers should conduct an awareness programme to e-portfolio to receive the highest contribution from tee academic staff members.

Staff members as the provider of online feedback - The study concludes that there is nearly 45 percent of academic staff members agree or strongly agree on providing online feedback and the majority of academic staff members are either unaware or disagree with providing feedbacks online. However, the policymakers should pay their higher consideration to conduct an awareness programme on the essentiality of providing online feedback on smooth functioning and higher utilization of available resources.

The final contributor and one of the most significant stakeholders of e-portfolio is administrators or the decision-makers. When considering the language preference of administrators towards e-portfolio is highly on English, which covers more than ¾ of the population.

Usability - the study concluded that more than 75 percent of the administrators have identified the usability of e-portfolio to a system like a university. Therefore, firstly they have conducted an awareness programme regarding the essentiality of e-portfolio to the administrators to maintain a common interest among administrators towards e-portfolio.

Simplicity - the analysis implies that there is nearly 40 percent of administrators are unaware or disagree towards the requirement of the simplicity of e-portfolio. Thereby with reference to the 40 percent of higher disagreement, the administrators should be keener on the essentiality of e-portfolio to a university.

Sufficient Budgetary - The analysis could be concluded that there is more than 60 percent of administrators are with the opinion that there are sufficient budgetary for e-portfolio.

With reference to the relatively lower awareness towards the requirement of establishing an e-portfolio at an excellent basement, the administrators have to be concerned about managing sufficient budgetary for e-portfolio.

The utility of the e-portfolio – this concluded that there is more than 80 percent of administrators are aware of the utility of the e-portfolio. Thereby the administrators do not require to pay higher attention in this regard, but they have to maintain the feeling of utility towards the e-portfolio.

References

Abrami, P. C., Wade, A., Pillay, V., Aslan, O., Bures, E. M., & Bentley, C. (2008). Encouraging Self-Regulated Learning

through Electronic Portfolios. Centre for the Study of Learning & Performance, Concordia University.

Allen, I. E., & Jeff Seaman. (2017). Digital Compass Learning: Distance Education Enrollment Report 2017. Babson Park: Babson Survey Research Group.

Connect Thinking. (2013, 03 27). Retrieved 03 25, 2018, from https://connectthinking.com.au/12-common-complaints-about-learning-management-systems-lms/

Hubwieser, P., & Böttcher, J. (2015). Personal Learning Environments in Future Learning Scenarios. Invited Keynote Talk. In A New Culture of Learning: Computing and next Generations. IFIP TC3 Working Conference (pp. 1-14). Lithuania: Vilnius University.

Hussey, J., & Hussey, R. (1997). Business Research.

JISC. (2008). Effective practice with e-portfolios. Retrieved March 20, 2018, from http;//www.jisc.ac.uk/eportfolio

Rasmussen, A. (2016, 10 13). Technology Advice. Retrieved 03 25, 2018, from https://technologyadvice.com/blog/human-resources/8-common-complaints-about-learning-management-systems/

Sekaran, U. (2009). Research Methods for Business: A Skill Building Approach. John Wiley & Sons.

Tam, M. (2002). University Impact on Student Growth: A quality measure? ournal of Higher Education Policy and Management,, 24(2), 211-218.

Wright, R. D. (2014). Student-Teacher Interaction in Online Learning Environments. Texas: IGI Global.