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2017 UBT International Conference

Oct 28th, 11:00 AM - 12:30 PM

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Recommended Citation

Metin, Hasan; Metin, Esra; Llapi, Gjylbehare; and Hyseni, Dukagjin, "Impact of Usage of ICT and Performance on Quality in Higher Education Institutions: An Empirical Study" (2017). *UBT International Conference*. 123.

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The Impact of Usage of ICT and Performance on Quality in Higher Education Institutions: An Empirical Study

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Abstract: This study presents the relationship among the quality, performance and usage of ICT in higher education. The conceptualization of quality relies on applicable knowledge and accomplishment of goals set in curricula of the subject/program- effective learning. The conceptualization of the performance is participation in active learning, to be able to finalize the tasks on time, getting high test scores, and students' progress in general. Lastly, the usage of ICT is understood as teaching and learning by using technology tools and resources- efficient learning. The results indicate that participation in the active learning, getting high test scores, and students' progress have positive effects on applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning. Moreover, teaching and learning by using technology tools and resources- efficient learning again have positive effects on applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning.

Keywords: ICT1, Quality2, Performance3

1 Introduction

Usage of ICT Information and Communication Technologies (ICT) has gained its importance due to enormous and continuous developments in every aspect of life. The classical way of lecturing and teaching techniques cannot keep with the advancements of the social life. Life outside the school is very fast and the classical methods cannot keep the students active enough in the classroom that is why students cannot increase their performance, they cannot participate in active learning, they are not able to finalize the tasks that are previously established and progress in general. Quality assurance is very critical for higher education institutions to be able to satisfy the expectations of the stakeholders in a best way. This study presupposes that, quality is very closely related with increasing the performance and usage of ICT.

2 Performance

Performance management and performance measurement are two very fundamental concepts under the concept of performance within management discipline which can be used interchangeably that, there is no consensus on how to define them and determine the differences in defining them. Since there is no consensus on the definition of performance, it is closely related with effectiveness, efficiency and productivity (Ammons ,1996) that determination of objectively

verifiable indicators and assessing whether they have been achieved is the simplest way of explaining the performance management or performance measurement.

Performance is measured almost in every sector ranging from public sector to third sector (Metin, 2017; Metin & Coskun, 2017) and several profit-seeking sectors. Performance measurement can be implemented in many different ways through using both financial and non-financial indicators. Usage of non-financial indicators in performance measurement became a trend in 90s (Kaplan & Norton, 1995). The balance score card is a performance measurement tool that is widely accepted and used in various sectors including educational institutions, that emphasizes the importance of using both financial and non-financial indicators in performance measurement attempts.

The literature review on performance management and performance measurement in educational sector focuses on different areas varying from public education (Smith & Meier, 1995a; Wrinkle & Steward & Polinard, 1999; & Guthrie, 2009) to higher education (Richardson, 1995; Berg, 1972; Ferris, 1992; Brown, 1999; Clifford & Guthrie, 1990) from quality in education (Smith & Meier, 1995b; Guthrie & Neumann, 2007; Kurien, 1981) to evaluation (Callan & Doyle & Finney, 2001) and diversity in education (Ely, 2004).

Performance is a very broad concept that it can be analyzed in an institutional level, divisional level or individual level. This study conceptualizes performance in the individual level through participation in active learning, to be able to finalize the tasks that are previously established, getting high test scores, and students' progress in general. It is presupposed that increase in the performance within individual level will have a positive effect on the quality of the services of the higher educational institutions.

3 Quality

Quality is the dependent variable of this study that, the effects of performance and usage of ICT on quality in higher education institutions is the research question of this study.

Quality assurance in higher education has become a new academic area in the area of educational development lately. Quality assurance practices are transferred or modified from profit seeking institutions and quality assurance has been seen in the importance of involvement of stakeholders and the value they bring in the higher education development.

The standards used with respect to quality assurance within the European Universities have been guided with the introduction of the European Higher Education Area, known otherwise as Bologna Process. The main aim of the Bologna Process is to introduce and implement common principles and standards of higher education in the member countries. The umbrella institution for quality assurance in European Union is European Association for Quality Assurance in Higher Education (ENQA). Kosovo Accreditation Agency focuses the standards and guidelines for internal quality assurance, which basically guide higher education institutions to have internal policy and structures continually ensuring and checking quality assurance internally in Kosovo.

4 The Usage of ICT in Teaching and Learning

The application of information technology (IT) into the learning process: the blackboard and chalk remain the primary teaching technologies in many business schools even while the merits of information technology to improve communication, efficiency and decision making in organizations are recognized and inculcated by IS researchers. However, as business schools experience increased competitive pressures, information technology is one area that schools might use to differentiate or compete with or, more importantly, to use as a catalyst for transforming educational processes).

Information and communications technology (ICT) is an accepted element in all our lives and has a central role to play in education. Since the appearance of the first government policy on ICT in education in 1997, a substantial investment has been made in ICT facilities and training in Irish schools. In Ireland, as in other countries, the debate about ICT in education focuses on the potential impact of ICT on teaching and learning and on the measures that need to be adopted to ensure that the potential of ICT to enrich students' learning experience is realized.

Even though the role of ICT in enhancing learning outcomes is a contested one, most of the researches done in this area suggest that there are number of benefits that ICTs bring to the knowledge creation, management and dissemination frontier. Some of the perceived benefits include: improved access to information, creation of an enabling environment for a wider participation in higher education, improvement of communication among students and between students and teachers, (Hill et al 2004) promotion of collaborative learning and supporting learner –centered approaches to teaching, increased flexibility and the development of competence-based curriculum.

Factors which influence teachers' decisions to use ICT in the classroom: Access to resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school and national policies, commitment to professional learning and background in formal computer training. This highlight the role of pedagogy and suggests that teachers' beliefs about teaching and learning with ICT are central to integration. It is suggested that successful implementation of ICT needs to address three interlocking frameworks for change: The teacher, the school, and policy makers.

5 Methodology

Linear regression has been utilized in order to determine the effect of the independent variables of the study (performance and usage of ICT) the dependent variable quality. Statistical Package for the Social Sciences (SPSS) has been used for the analysis. The hypotheses of the study are as follows:

Hypothesis 1: Usage of ICT has a positive effect on quality in Higher Education Institutions in Kosovo

Hypothesis 2: Performance has a positive effect on quality in Higher Education Institutions in Kosovo

Below are tables derived from the SPSS.

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.618 ^a	.382	.360	.51270	1.734

This indicates that the adjusted R square is 0.38 meaning that the independent variables explain the 38 percent of the total effect on quality. Durbin Watson figure will be mentioned below when analysing the assumptions of regression.

Table 2. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.114	2	4.557	17.337	.000
	Residual	14.720	56	.263		
	Total	23.835	58			

This indicates that the significance of the model in general is .000 which is acceptable at the 99 percent confidence level.

Table 3. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error				Beta	Zero order	Partial	Part	Tolerance	VIF
1	(Constant)	1.251	.562		2.227	.030						
	ICT	.469	.136	.403	3.457	.001	.544	.419	.363	.811	1.233	
	Performance	.283	.101	.326	2.792	.007	.501	.350	.293	.811	1.233	

This indicates that both usage of ICT and Performance have acceptable significance levels at the 99 percent confidence level.

So the regression function is

$$\text{Quality} = 1.251 + 0.469 \text{ ICT} + 0.283 \text{ Performance}$$

The assumptions of Regression model should be checked as well. The first assumption is normality assumption of the residuals.

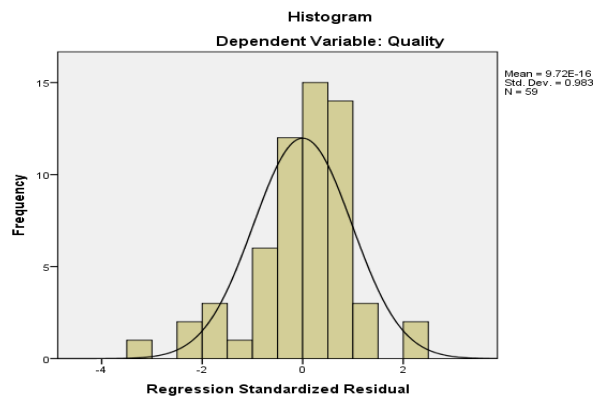


Fig. 1. Normality

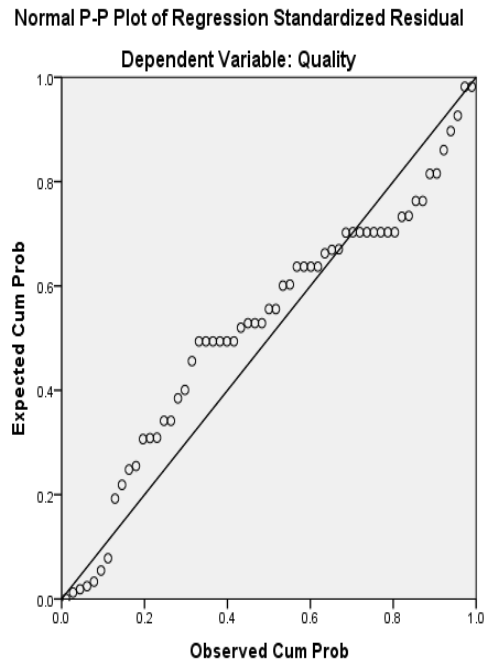


Fig. 2. Normality

Given the figures above it can be concluded that the residuals are normally distributed.

Multicollinearity

Multicollinearity does not seem to be a problem because the VIF figures are 1,233 (less than 10)

Heteroscedasticity

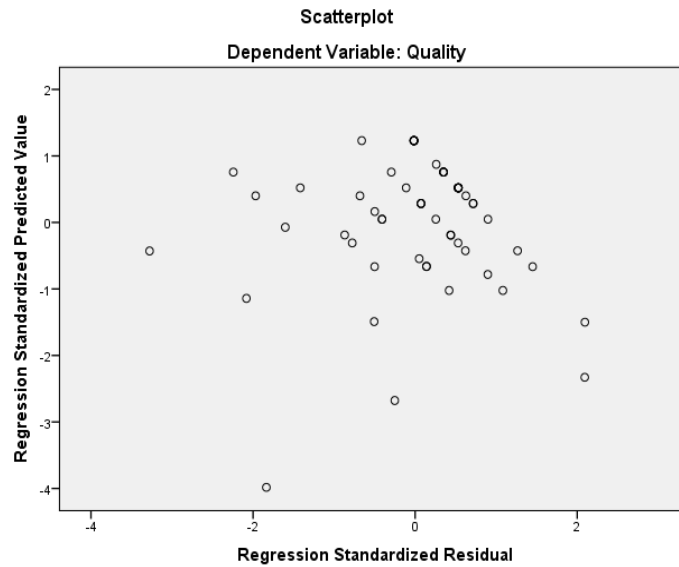


Fig. 3. Heteroscedasticity

Checking the assumption with the graphs above, shows that there is no problem regarding heteroscedasticity.

Autocorrelation

The last assumption to be focused on is autocorrelation assumption. If Durbin Watson test is applied the results below are obtained.

0	dl	du	2	4-du	4-dl	4	d

dl= 1.35 (from Durbin Watson table)

du= 1.48 (from Durbin Watson table)

4-du =2.52

4-dl= 2.65

Here, our d value of 1.73 is between du (1.48) and 4-dl (2.65) so we don't reject the H_0 which means there is no autocorrelation problem.

Conclusion/ Discussion

This study conceptualizes quality as applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning. The conceptualization of the performance on the other hand is participation in active learning, to be able to finalize the tasks that are previously established, getting high test scores, and students' progress in general. Finally, the usage of ICT is understood as teaching and learning by using technology tools and resources-efficient learning.

The results indicate that participation in the active learning to be able to finalize the tasks that are previously established, getting high test scores, and students' progress have positive effects

on applicable knowledge and accomplishment of goals set in curricula of the subject program-effective learning. Moreover teaching and learning by using technology tools and resources-efficient learning again have positive effects on applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning.

The regression equation formulates the linear relationship among the dependent and independent variables. The choices of the participants indicate that one unit increase in active learning, to be able to finalize the tasks that are previously established, getting high test scores, and students' progress in general (1 unit increase refers to 1 level shift of the opinion of the participants with respect to their agreement on the subject matter) will increase the quality (applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning) by 0.283 units. By the same token 1 unit increase in as teaching and learning by using technology tools and resources- efficient learning will increase the quality (applicable knowledge and accomplishment of goals set in curricula of the subject/ program- effective learning) by 0.469 units.

In general the study concludes that both performance and usage of ICT have positive effects on the quality of education provided in higher education institutions in Kosovo.

Future Research Recommendations

The probable future researchers might focus on different aspects of performance in education and try to understand the relation between performance and motivation in education. Moreover quality is a very comprehensive concept that researchers can analyze quality in education within different frameworks such as real life implementations of what learned from school and lecturers competency about the usage of ICT.

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