
IDENTIFYING PREDICTORS OF STUDENT SATISFACTION AND STUDENT MOTIVATION IN THE FRAMEWORK OF ASSURING QUALITY IN THE DELIVERY OF HIGHER EDUCATION SERVICES

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Received 7 April 2014; accepted 1 May 2014

Abstract. Nowadays, the quality of educational services provided by a university is a crucial aspect of the education managers' strategy in the customer-driven education context, quality assurance in education being an essential issue to be promoted in European higher education institutions. Students' evaluation of the educational services (that is consumer-oriented assessment) can be regarded as one of the most significant educational management tools used for stimulating quality enhancement in a university. It is vital for supporting decision-making process. A special emphasis may be put on monitoring student satisfaction with the educational services and student motivation toward studies. Understanding the central factors that are supposed to influence and predict student satisfaction and student motivation may provide education managers with best possible solutions to improve quality of the educational services in a higher education institution. This paper presents the results of an empirical study performed in Riga Technical University. The study was aimed at identifying the basic determinants (predictors) of student satisfaction and motivation in the framework of the ESP (English for Specific Purposes) course.

Keywords: educational management, higher education services, quality assurance, student satisfaction, student motivation.

Reference to this paper should be made as follows: Stukalina, Y. 201X. Identifying predictors of student satisfaction and student motivation in the framework of assuring quality in the delivery of higher education services, *Business, Management and Education* 12(1): 127–137. <http://dx.doi.org/10.3846/bme.2014.09>

JEL Classification: M19.

1. Introduction

Modern higher education has to deal with many challenges owing to fundamental challenges in the global environment (Bernhard 2012). Today, the pressures for modernizing higher education can be traced everywhere (McRoy, Gibbs 2009). According to Kazeroony (2012), there are many factors that have given rise to the

need for re-considering strategies employed in higher education: the new generations of learners, technological innovations, economic factors, etc. The central businesses of modern universities remain teaching and research; however, their role has broadened in the context of social inclusion and knowledge economy (Shattock 2003). As stated by Wissema (2009), contemporary higher education institutions are changing fundamentally, since they have to compete for the best students in the international environment.

Promoting learning is still considered to be the primary purpose of educational organizations, but other management and leadership responsibilities should also contribute to this predominant objective (Bush *et al.* 2010). Faced by unprecedented accountability pressures managers working in the area of education have to deliver advanced educational standards; they also require better skills and flexibility to sustain their institutions (Bush 2011). Thus, educational management, being mainly concerned with the purpose of education (Bush 2011), embraces the activities aimed at achieving academic excellence and competitive advantage. Identifying the mechanisms of competitive advantage is directly attributable to the increased competition between higher education institutions. According to Bernhard (2012), all changes and transformation processes in higher education are closely related to an increasing interest in quality. As stated by Moldovan (2012), competitive strategies in the area of higher education can be developed through quality. By means of integration of quality assurance and strategic management procedures the university's strategy is implemented, and organizational objectives are achieved (Kettunen 2011). It is obvious that the quality of educational services provided by a university has become a crucial aspect of the education managers' strategy in the customer-driven education context. The students, their parents and the society are key customers of education, and the entire process of managing for quality in a higher education institution focuses on the needs of its customers – both internal and external (Sharma, Kamath 2006). According to Kettunen (2008), management for quality in education is related to stakeholder accountability, customer satisfaction and issues of assessment, the focus being put on understanding the customers' needs.

Since the adoption of the Bologna Declaration (1999), improving quality of higher education and developing quality assurance (QA) systems related to establishing stakeholder confidence has been a high priority for the European Union member countries (Standards... 2005; Bergen Communiqué 2005; London Communiqué 2007; The European... 2012).

As said by Diamantis and Benos (2007), the necessity to guarantee quality enhancement in education has stimulated the development of various methods of assessment of the promised quality. Planned collection and analysis of data aimed at receiving constructive feedback from students in relation to various aspects of the educational environment is vital for supporting decision-making process in the context of a higher school improvement (Stukalina 2012). It is vital to take into account the

expectations of students, which are changing now: modern students expect to choose “what they learn, how they learn and when they learn, according to their individual needs and interests” (COM (2013) 499 final). It should be noted that, in higher education, “students have always been expected to play an active role in the educational process” (Little, Williams 2010). A university is a social place that contributes to the socialization of young people, as well as to the development of their personalities (Daxner 2010), so students must be to be regarded as active members of the academic community.

Participation of students helps ensure the legitimacy of the QA system itself and its results (Stråhlman 2012). Today, European higher education institutions have to create such learning environments and such feedback systems that will “allow their students’ views, learning experience, and their performance to be taken into account” (Report... 2013). Students’ evaluation of the educational services (that is consumer-oriented assessment) can be regarded as one of the most significant education management tools used for stimulating quality enhancement of the educational environment of a university. According to Kara and DeShields (2004), educational institutions that recognize the importance of consumer-oriented principles would have a better chance of satisfying the needs of their students more effectively.

In this case, emphasis may be put on student satisfaction with the educational services (in a broader sense, with the educational environment) and their motivation for further studies. Student satisfaction is considered to be an important quality factor in education (Postema, Markham 2001). The practice of monitoring satisfaction levels of consumers of higher education services is widely used in modern universities (Chenicheri *et al.* 2010); it is implemented through information feedback, which “shows deviations from standards and initiates changes” (Koontz, Wehrich 2010). Student satisfaction – “*the result of student interactions with the educational environment as an outcome of the expectations and experiences of the subject, study course, or study programme*” – can be viewed as a precursor of student motivation – “*students’ positive emotional experience in education as the result of students’ interactions with the educational environment*” (Stukalina 2012). Thus, being responsive to students’ needs and expectations, educators are supposed to increase their motivation for further studies.

Education managers may successfully employ student evaluations in different contexts including monitoring service quality in higher education institutions. Understanding the main factors that are supposed to have impact on student satisfaction with the educational services and student enthusiasm toward studies may provide education managers with best possible solutions for supporting constant quality improvement of the educational environment of a university. This paper discusses the results of an empirical study performed in the form of the integrated educational environment evaluation in Riga Technical University. The study was aimed at identifying the basic predictors of student satisfaction and student motivation in the frame of the ESP (English for Specific Purposes) course.

2. Empirical study

2.1. Materials and methods

The holistic approach to management of the educational environment of a university presupposes that all aspects of the environment should be considered and analyzed (Stukalina 2011). Students' evaluation of the educational environment should be performed in the framework of all-embracing model of managing the educational environment resources, which is associated with managing the educational environment as an integrated multi-level supersystem that embraces various interrelated subsystems.

This model is based on the typology of management and leadership models adapted by Bush from Bush and Glover (Bush 2003). It assumes that education managers coordinate and redistribute the integrated educational environment resources: (a) material, (b) human and (c) informational; these resources are related to the four central educational environment aspects (Stukalina 2010):

- Physical and technological environment including university facilities (buildings, lecture rooms and lecture halls, laboratories, libraries, etc.).
- Instructional environment including regulative documents, teaching materials, on-line instructional materials, etc.
- Executive environment that is related to conducting lessons and delivering lectures.
- Psychological environment that is related to the psychological atmosphere created in the study process.

There was developed an original wide-ranging evaluation questionnaire containing ten evaluation indicators associated with the four above aspects. Two hundred fourteen students from Riga Technical University (Faculty of Architecture and Urban Planning, Faculty of Civil Engineering, Faculty of Computer Science and Information Technology, Faculty of Electronics and Telecommunications) were surveyed after completing their ESP course. The rationale for engaging respondents from different faculties was to obtain a constituent and comprehensive perspective from within the RTU.

The questionnaire contains 73 items (evaluation statements) grouped into ten qualitative evaluation indicators representing four higher order dimensions: the executive environment, physical and technological environment, instructional environment, psychological environment (Fig. 1).

Satisfaction and motivation associated with every indicator are presented by separate items. Students were asked to rate the items on a five-point Likert scale, as follows: 1 = strongly disagree, 2 = disagree, 3 = partly agree or disagree, 4 = agree, 5 = strongly agree.

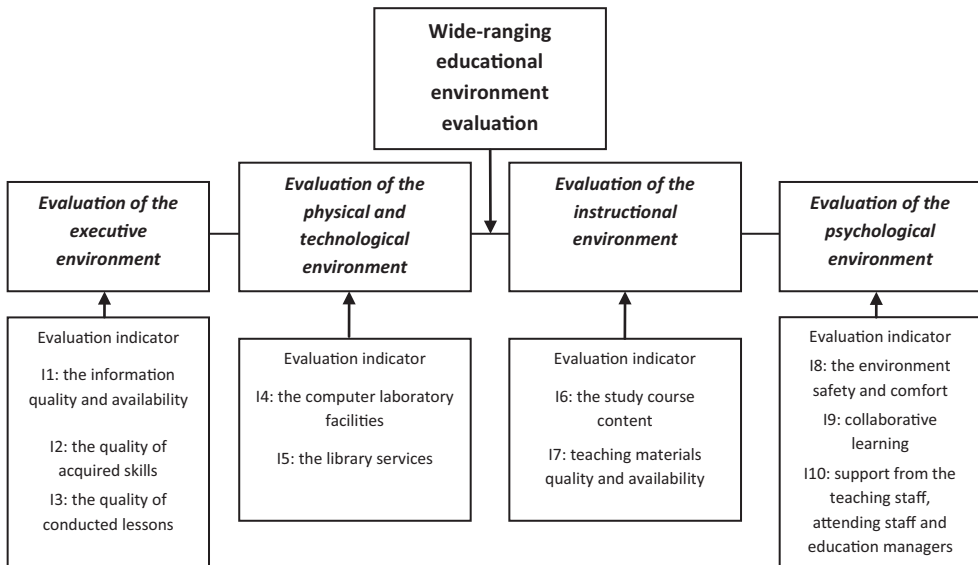


Fig. 1. The proposed indicators for evaluating the integrated educational environment from the students' perspective (Source: Stukalina 2011)

2.2. Analysis and results

The standard tools and procedures of SPSS 17 software package were utilised. Measurement scale reliability was evaluated by means of Cronbach alpha. Cronbach's alpha was used to assess the internal consistency reliability of a multiple item instrument. The coefficient alpha values were calculated for all ten indicators. The reliability check indicates that all measures satisfied the requirement for Cronbach's alpha reliability. The coefficient alpha ranged from 0.804 to 0.871 indicating that the scale was internally consistent.

The regression analysis was then used to measure the degree of influence of the independent variables (indicators) on a dependent variable (student satisfaction or student motivation). The impact of the various indicators associated with the four basic aspects of the educational environment was investigated using a regression on the students' level of satisfaction with the variables, which had significant correlation coefficients. The stepwise regression model definition procedure was applied as a model-building method.

The forward stepwise selection began with independent variables being entered into the regression equation one at a time, provided predictors meet the statistical significance criteria with the dependent variable. Selection of independent variable entry was based on the descending order of the largest significant correlation coefficient. The

forward stepwise regression was conducted for the ten evaluation indicators to limit the number of input variables. In the end, there were obtained two models with high adjusted R square (coefficients of determination): 0.829 for student satisfaction (see Table 1) and 0.679 for student motivation (see Table 2).

Table 1. The forward stepwise regression procedure: satisfaction (Source: created by the author)

Model summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	.790 ^a	.625	.623	.31453
2	.857 ^b	.735	.733	.26488
3	.883 ^c	.780	.777	.24183
4	.896 ^d	.802	.798	.23004
5	.904 ^e	.818	.814	.22122
6	.910 ^f	.827	.822	.21600
7	.914 ^g	.835	.829	.21165

Table 2. The forward stepwise regression procedure: motivation (Source: created by the author)

Model summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	.720 ^a	.519	.516	.42167
2	.787 ^b	.619	.615	.37614
3	.809 ^c	.655	.650	.35884
4	.822 ^d	.676	.670	.34846
5	.828^e	.686	.679	.34363

The most significant predictors of student satisfaction include seven causal factors (see Table 3): Ind6: “study course content”; Ind3: “quality of conducted lessons”; Ind8: “environment safety and comfort”; Ind10: “support from teaching and attending staff, managers”; Ind5: “library services”; Ind9: “collaborative learning”; Ind4: “computer laboratory facilities”.

Table 3. Regression coefficients: satisfaction (Source: created by the author)

Independent variable	Unstandardized coefficients		Standardized coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-.003	.119		-.029	.977
Ind6	.238	.041	.289	5.862	.000
Ind8	.166	.031	.194	5.280	.000
Ind3	.197	.038	.242	5.162	.000
Ind10	.124	.032	.152	3.882	.000
Ind5	.106	.025	.141	4.226	.000
Ind9	.101	.031	.133	3.300	.001
Ind4	.061	.020	.096	3.097	.002

The most significant predictors of student motivation include five causal factors (see Table 4): Ind6: “study course content”; Ind10: “support from teaching and attending staff, managers”; Ind9: “collaborative learning”; Ind7: “teaching materials quality and availability”; Ind5: “library services”.

Table 4. Regression coefficients: motivation (Source: created by the author)

Independent variable	Unstandardized coefficients		Standardized coefficients		
	B	Std. error	Beta	t	Sig.
(Constant)	-.261	.188		-1.390	.166
Ind6	.274	.058	.282	4.723	.000
Ind10	.269	.049	.277	5.511	.000
Ind9	.183	.047	.202	3.927	.000
Ind5	.143	.039	.160	3.707	.000
Ind7	.156	.059	.143	2.630	.009

The summary of the most significant predictors of student satisfaction and student motivation in the integrated educational environment is presented in the diagram below (Fig. 2).

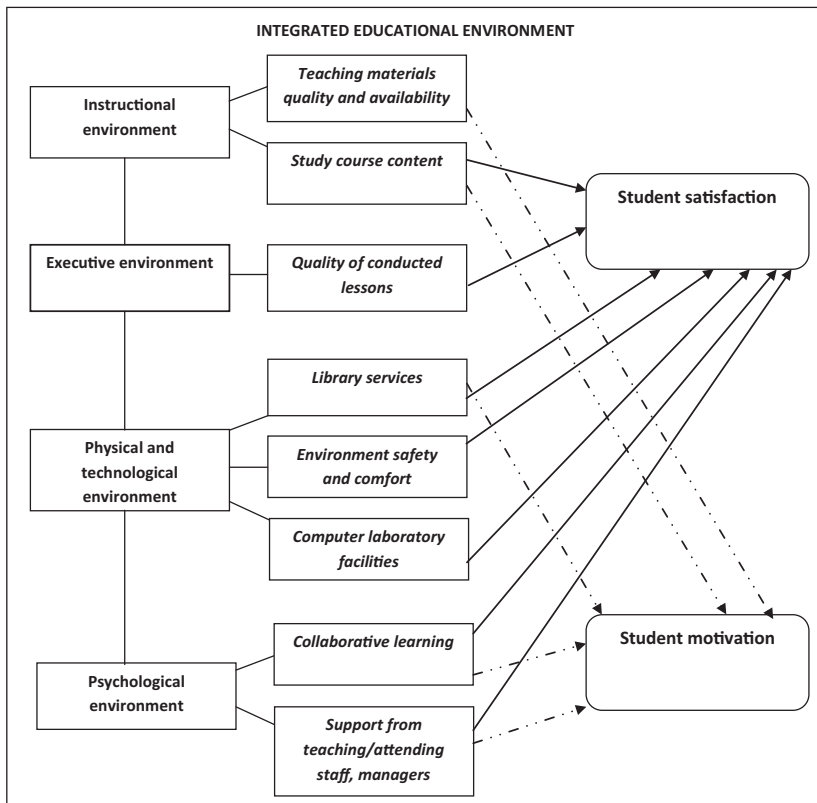


Fig. 2. Predictors of student satisfaction and student motivation in the integrated educational environment (Source: created by the author)

The results indicate that a number of predictors contribute to student satisfaction and student motivation, the main predictors of student satisfaction and student motivation being associated with all four aspects of the educational environment: 1) the instructional environment (“study course content”, “teaching materials quality and availability”); 2) the psychological environment (“collaborative learning”, “support from teaching and attending staff, education managers”); 3) the physical and technological environment (“library services”, “computer laboratory facilities”); 4) the executive environment (“quality of conducted lessons”). This goes to prove that both student satisfaction and student motivation can be stimulated by different aspects of the integrated educational environment, which are related to various organisational processes and activities (teaching and learning activities, managerial activities, economic activities); the activities directly linked to the study process are supposed to play a key role in determining student satisfaction and student motivation (“study course content”). This also means that the above determinants do a good job of enhancing student satisfaction and student motivation in higher education.

All of the aforesaid substantiates our earlier assumptions that the above factors may serve as evaluation indicators used for assessing the quality of the educational environment of a university, provided that the environment is assessed as an integrated whole in the form of student evaluations of a study course, study programme, faculty, etc. (Stukalina 2012). This would allow education managers to get the big picture of the educational services offered to students, at the same time paying attention to the details based on information gained from internal customers of the university. So, students are expected to indirectly participate in the process of decision-making in the context of providing quality assurance in higher education.

3. Conclusions

The research has provided empirical findings to understand, which factors may determine and predict both student satisfaction with educational services and student motivation toward studies. The findings of this research indicate that student satisfaction and motivation can be modelled on a number of predictors (determinants) represented by a set of indicators associated with different aspects of the integrated educational environment.

The results of the study may be employed by university managers for creating their own wide-ranging scheme for assessment of the educational environment in the context of assuring service quality in higher education, the emphasis being put on student satisfaction and student motivation. However, they should take into consideration the specific nature of a higher education institution. The author hopes that these insights will help universities to better focus their activities and the available resources in the framework of implementing a set of strategies aimed at achieving competitive advantage and academic excellence.

There are also some limitations that need mentioning. This study is an effort to model student satisfaction and student motivation on the basis of a particular study course. Therefore, several factors may have been not considered. The sample in this study included one university, so caution must be exercised in generalizing the results beyond this higher education institution. Future research with a more diverse student population is recommended to verify and generalize the findings. Besides, the scale items could be further refined to better define and evaluate the factors that are supposed to influence student satisfaction with educational services and their motivation toward studies.

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