

Teaching and Learning at Universities

Promoting good teaching to promote
good learning in a changing society

Collective Monography

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Preface

Good teaching promotes good learning. As a "scientific human resource" of a society, well-educated graduates greatly promote the prosperity of a society. The consistent development of excellent teaching is indispensable – otherwise in a changing society there is the risk that universities will lose their reputation and legitimacy.

To promote teaching at Central Asian universities, the ERASMUS + project "CACTLE" (<http://management.cactle.eu>) was implemented between 2015 and 2018. 4 universities from Austria, Germany, and Spain as European project partners and 9 universities from Kazakhstan, Kyrgyzstan and Uzbekistan as Central Asian project partners worked together on this challenge. This collective monography is an important outcome of the project. Against the background of social change and its influence on the expectations of the profile of university graduates, it is dedicated to the topic "Teaching and Learning at Universities".

University graduates should be committed and reflective. Furthermore, they shall be able to act self-confidently in the globalized world. Concerning commitment, *Nurzhan Kenzhebekov, Zhanna Tutkusheva and Assel Kabdybay* reflect on the concept of an entrepreneurial and smart university as an important component of the formation of the entrepreneurial potential of students; *Bakhtiyor Navruz-Zoda, Golib Shomiev, and Nutfillo Ibragimov* present their thoughts on the influence of entrepreneurial thinking to human capital. Concerning reflectiveness, *Alessandra Kenner and Dirk Jahn* discuss the issues of critical thinking and media literacy in higher education. Concerning requested skills of university graduates in a globalized world, *Ainura Omarova and Julia Vikulenko* present a case study, focussing multilingual education in Kazakhstan.

To realize the reorientation of graduate profiles, universities and their units need to rethink their structures and management techniques. Concerning study structures, *Regina Andekina* analyses the results of the credit system implementation in Kazakhstani higher education institutions. Concerning digitalization structures, *Nurlan Tazhbayev, Ainagul Tazhbayeva, and Zhanna Mukanova* present their reflections on challenges of the "Electronic University"; *Zhanna Mukanova* explains how a proper design of information systems can support the education process. Concerning management techniques, *Gulnara Moldakhmetova and Daniyal Orazalinov* discuss the use of the Balanced Scorecard for the management of the teaching and learning centre "THE CACTLE".

It is essential that curricula are adapted to changes in society. Innovative ways to renew curricula are shown by *Regina Andekina, Viktoriya Tsay and Ainura Kaldarova* using the example of Narxoz University and *Nutfillo Ibragimov* using the example of the tourism industry.

Undoubtedly, the methodological-didactic implementation of curricula in the classroom is the nucleus of good teaching that promotes good learning. *Ainur Tankiyeva and Didar Ilyassov* reflect this issue for the course "Entrepreneurship and Business Development". In their contribution, *Alena Králová and Kateřina Berková* compare traditional and modern teaching methods in the Czech Republic. The demand to adapt the methodical-didactic setting to the zeitgeist is taken up by *Roza Bugubayeva, Roza Bespayeva and Nazar Ula-kov* for Kazakhstan, by *Makhabat Mambetalieva and Aigerim Bokoeva* for Kyrgyzstan, as well as by *Ortikjon Khurramov and Javlon Tokhirov* for Uzbekistan. Special methodological-didactic issues are discussed by *Armiyash Nurmagambetova and Manshuk Yeskindirova*,

who put critical thinking at the centre of their contribution. *Javlon Tokhirov and Ortikjon Khurramov* reflect on the evaluation process, *Yerzhan Syzdykbekov* presents modern educational technologies and methods in problem-oriented teaching, and *Rahat Bekboeva* analysis how to organize student's independent work. Finally, *Artur Zotov* discusses differences in the use of teaching methods for company courses and student courses.

In recent years, e-support in learning has become more and more important. *Lobar Babakhodjaeva and Elena Volkova* present how blended learning was introduced at the Westminster International University in Tashkent; *Iroda Komilova and Bekhzod Egamberdiev* analyse the effectiveness of these blended learning measures. Finally, *Gerhard Geissler, Ilse Pachlinger and Rosanna Steininger* discuss the use of an inverted classroom for the competence development of business teachers.

This collective monography has been realized thanks to the support of the ERASMUS+ initiative of the European Union. Thanks go also to all authors who have taken up the challenge of delivering a scientific article in English. And of course, many thanks go to *Dionisi Nikolov*, who was busy with editing the contributions.

Gerhard Geissler, Franz-Karl Skala (Eds.)

Vienna, 2018

Iroda Komilova / Bekhzod Egamberdiev (Westminster International University in Tashkent)

Blended learning effectiveness: empirical study of Westminster International University in Tashkent students

1 Introduction

Over the last two decades traditional teaching trend to blend more and more with technology and internet mediated methods of teaching to meet the diverse needs of learners and improve their learning level (Bielawski and Metcalf 2005). This might be stimulated due to the main advantage of online education - expansion of educational opportunities, i.e. allowing global access to education despite geographical locations of learners (Lim et al. 2007). Along with addressing the issue of place and time constrains, online education allows flexible learning modes so students can control their learning path, pace, and contingencies of instruction (Hannafin 1984). On the other hand, success of online and blended learning will be delusion if learners are not self-motivated, active learners (Daniels/Moore 2000), and possess strong organizational skills (Oh/Lim, 2005). The major thrust of blended instruction is to overcome the shortcomings of online instruction and utilize various instructional sequencing and delivery strategies to enhance learner satisfaction while also achieving increased learning outcomes (Lim et al. 2007).

Advancement in technology and increasing internet speed in Uzbekistan gave opportunity to use different innovative modes of teaching in Higher Education Institutes (HEI) including blended learning. This in its turn raises the question of blended learning effectiveness which has quite a number of dimentions (Means et al. 2013).

2 Research Context and Research Question

In 2009, more than 74% of American higher educational institutions agreed that online education is an important component of their long-term strategy (Allen/Seaman 2010). However, despite HEIs investing more to online education and focusing on diversifying teaching and leaning modes not all learners are ready to study outside of classroom. In a report by Oxford Group (2013), some learners (16%) have negative attitudes towards blended and online learning and one forths of students (26%) are concerned whether they can complete study in blended learning environment. Learners are important partners in any learning process and therefore, their backgrounds and characteristics affect their ability to effectively carry on with learning and being in blended learning, the design tools to be used may impinge on the effectiveness in their learning (Kintu et al, 2017).

In current research effectiveness of blended learning is going to be studied in terms of relationship of learner characteristics, namely, age, gender, workload management and attitude towards blended learning and learner's outcomes (motivation, satisfaction and knowledge construction).

3 Literature review

3.1 Definition of Blended Learning

There are many definitions of blended learning. According to Graham et al. (2003) the most frequently used definitions of blended learning among researchers are:

1. Combining *instructional modalities* (or delivery media) (Bersin and Associates 2003; Orey 2002; Singh/Reed 2001; Thomson 2002).
2. Combining *instructional methods* (Driscoll 2002; Rossett 2002).
3. Combining *online and face-to-face instruction* (Reay 2001; Rooney 2003; Piccano 2006; Young 2002).

The first two definitions are rather broad and could be used to define almost all learning systems, while the last one agreed to be accurate.

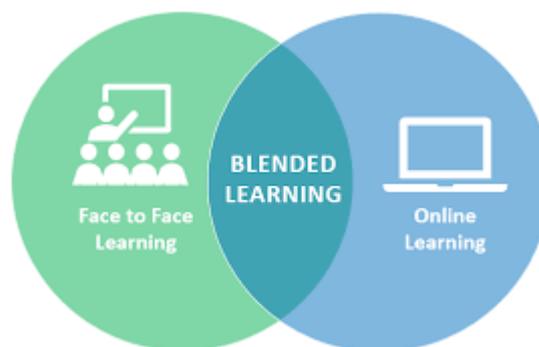


Figure 1: Blended Learning

Thought, blended learning is not just mixing different delivery modes, but its focus on the learning and business outcome. Singh and Reed (2001: 2ff.) specify that blended learning focuses on optimizing achievement of learning objectives by applying the *right* learning technologies to match the *right* personal learning style to transfer the *right* skills to the *right* person at the *right* time.

3.2 Defining Dimensions of Blended Learning Effectiveness

Effectiveness of blended learning depends on quite a number of different factors. Primarily it is measured by learners grades, course completion, retention and graduation rates. Students in blended learning environment have higher average score than in non-blended learning environment (Kenney/Newcombe 2011). Similarly, increase in course completion rates, improved retention and increased student satisfaction were observed in blended learning environments (Garrison/Kanuka 2004).

However, blended learning effectiveness may depend on many other factors which Hoffman (2014) classified into three categories: technology challenges, organizational challenges, and instructional/design challenges. Computer or technology literacy of learners or in other words “experience” with technology is one of the important elements of success of blended and online education (Schrum/Hong 2002). Wang and Newlin (2002a; 2002b) found that self-efficacy for technology skills is determinant of learner performance.

When implementing blended learning, in majority cases little attention is paid to the actual design of content (Hoffman 2014). Sitzman et al. (2006) found that web-based training was slightly more effective than face-to-face training for acquiring declarative knowledge (‘knowing that’), but not for procedural knowledge (‘knowing how’). This finding under-

score the importance of design of studies and content in blended and online learning (Means et al. 2013). Kenney and Newcombe's (2011) research shows that, if designed correctly, blended instruction is an effective learning strategy that can promote student participation, engagement, and interactivity. These findings can be supported by Lin and Vassar's (2009) findings where learner success was found dependent on ability to cope with technical difficulty as well as technical skills in computer operations and internet navigation.

Another important factor which influence on effectiveness of online learning is learner autonomy. Numerous distance education researchers have identified learner autonomy as an important factor in academic success (Holmberg 1995; Jung 2001; Kearsley 2000; Keegan 1996; Peters 1998; Lynch/Dembo 2004). Self-regulated learners are active, adaptive constructors of meaning who control important aspects of their cognition, behaviour, and environment in attaining their learning goals (Pintrich 2000). Personal choice and control, important elements of learner autonomy, is important for learners in blended environment (Doherty 1998). In Kintu et al. (2017) research learner attitudes towards blended learning were significant factors to learner satisfaction and motivation while workload management was a significant factor to learner satisfaction and knowledge construction.

According to findings of Oxford Group (2013) student characteristics such as gender play significant role in academic achievement, but no study examines performance of male and female as an important factor in blended learning effectiveness (Kintu et al. 2017).

4 Methodology

4.1 Research Design

This research applies a quantitative design in order to analyze the impact of blended study considering different controlled variables such as student characteristics. Similar studies have already been implemented where there are mainly quantitative based analysis with different empirical analysis (Kintu et al. 2017). The research design was experimental in which final year undergraduate students from Westminster International University in Tashkent took Dissertation course including online materials for Research Methods course. During one semester student were given a full access to a learning management system.

4.2 Research Instruments

In order to conduct this study, standardized questionnaires were used as they are often applied in the field of education where there are different factors to be considered (Ross 2005). This study extends the previous research that has analyzed different factors affecting on the effectiveness of blended study. Similarly, survey instruments are based on only closed-ended questions, to test statistical significance of relationship between different dependent and independent variables. A questionnaire with items on student characteristics, knowledge construction, attitudes, satisfaction, and motivations were developed in order to include all related factors to conduct current empirical study. The online self-regulated questionnaire (Barnard et al. 2009) was very suitable in order to collect information related to mainly satisfaction, motivation and knowledge construction on the module.

4.3 Sampling Technique

Self-selection sampling technique was used in order to collect 100 responses from those who took the module during first and second semester of 2017-2018 academic year.

4.4 Data Analysis

The first part of the study provides a descriptive study including mainly frequency and percentages of related information connected with variables. Moreover, another important method to analyse related data was about chi² correlation and Kendau's Taub coefficients to provide both significance and coefficients between variable associations. As for data analysis, categorical based regression was used to represent the causality of independent and dependent variables. This method known as ordered logit model (OLM) is a part of maximum likelihood methods (Gujarati 2011). The reason of applying this model is explained by the estimation of relationship between an ordinal dependent (Satisfaction, Motivation, and Knowledge Construction) and different related independent variables (Age, Gender, Job Position, Learner Autonomy, and Computer Competence). Meantime, our ordinal dependent variable is divided into 5 liker scale based levels (1=Very Low; 2=Low; 3=Neutral; 4=High;

In ordered logit model, coefficients are measured as a linear function of the independent variables including different cutpoints. Moreover, the probability of dependent variables (satisfaction, Motivation, and Knowledge Construction) is related to the probability of estimated linear function with a random error.

$$\Pr([\text{outcome}]_j - i) - \Pr(k_{(i-1)} < \beta_1 x_{1j} + \beta_2 x_{2j} + \dots + \beta_k x_{kj} + u_j < k_j)$$

In this model, u_j is regarded to be logistically distributed. Moreover, coefficients are B_1, B_2, \dots, B_k together with the cutpoints k_1, k_2, \dots, k_k .

Concerning variables included in this study, there are three different outcomes measured through the use of logistic regression.

$$\text{Model-1: } Pr(\text{Satisfaction}) = b_1 \text{Age} + b_2 \text{Gender} + b_3 \text{Job Position} + b_4 \text{Learner Autonomy} + b_5 \text{Computer Competence}$$

In this case, Satisfaction as dependent variable, was measured with Liker-scale based responses where there were 3 representing questions. ¹

$$\text{Model-2: } Pr(\text{Motivation}) = b_1 \text{Age} + b_2 \text{Gender} + b_3 \text{Job Position} + b_4 \text{Learner Autonomy} + b_5 \text{Computer Competence}$$

Similarly, motivation is as another dependent variable, also includes three representing Liker-scale questions. ²

¹1. How are you satisfied with content of blended material? 2. How are you satisfied with instruction given to blended material? 3. How are you satisfied with the link between blended materials and face-to-face lectures/seminars?

²1. I enjoyed reading/listening blended materials. 2. It was interesting to read/listen blended material. 3. Reading/listening blended material encouraged me to look for additional material on topic.

Model-3: Pr (Knowledge Construction) = b_1 Age + b_2 Gender + b_3 Job Position + b_4 Learner Autonomy + b_5 Computer Competence

The last dependent variables representing a new knowledge gain covers two sub questions.³

4.5 Reliability-Internal Consistency

This study used Cronbach's alpha test in order to assess the reliability by focusing on internal consistency of the data. As it can be seen from the table, Cronbach's Alpha for total internal consistency test indicates 0.53. According to Acock (2014) Cronbach's Alpha result between 0.6 and 0.5 is poor; however, it is still acceptable showing a minimum internal consistency of selected variables.

Item	Observation	Sign	Item-test correlation	Item-rest correlation	Average interitem correlation	Alpha
Age	100	-	0.2472	0.0064	0.1458	0.5773
Gender	100	+	0.4175	0.1906	0.1206	0.5231
Job Position	100	+	0.3129	0.0755	0.1361	0.5576
Learner autonomy	100	+	0.5718	0.3740	0.0977	0.4642
Computer competence	100	+	0.3226	0.0859	0.1347	0.5545
Satisfaction	100	+	0.6082	0.4199	0.0923	0.4486
Motivation	100	+	0.6241	0.4403	0.0900	0.4416
Knowledge construction	100	+	0.4377	0.2137	0.1176	0.5160
Online Material Interface	100	+	0.7231	0.231	0.1320	0.5410
Test Scale					0.1141	0.5369

Table 1: Internal Consistency of Variables

5 Data Analysis

According to respondent profiles included in this study, average age of participants is 22 years old. Concerning gender difference in the survey, it can be seen that 36% of students were males as opposed to 64% who were females.

³¹. I gained new/additional knowledge/competence from blended material. 2. Blended learning material assisted me in writing business dissertation.

Variable	Mean	Standard Deviation	Definition
Age	22.11	2.20	Age of final year undergraduate Business Administration faculty students
Gender	1.64	0.48	36% male and 64% female
Job Position	1.9	0.30	10% part time and 90% no job
Learner autonomy	3.38	1.05	Whether student preferred to study independently or not
Computer competence	3.21	0.98	Competence level from the lowest to the highest
Online Material Interface	2.84	0.85	Online material interface level from the lowest to the highest
Satisfaction	3.68	0.82	Dependent variable showing the level of satisfaction from the lowest to the highest after introducing blended materials to study the module
Motivation	3.63	1.05	Dependent variable showing the level from the lowest to the highest motivation after introducing blended materials to study the module
Knowledge construction	3.96	0.90	Dependent variable showing the level from the lowest to the highest knowledge construction after introducing blended materials to study the module

Table 2: Descriptive Statistics

As for job positions, there were students with part-time job who represented only 10% leaving 90% students without being employed. Interestingly, the majority of students responded to different questions including both independent and dependent variables by choosing the Likert scale based level at more than 3.

5.1 Correlation Study

Correlation study shows the relationship between three independent variables (learner autonomy, computer competence, and online material interface) and three other depend-

ent variables (satisfaction, knowledge construction, and intrinsic motivation). The main findings of this empirical analysis, as shown in Table-3, some variables have positive significant relationship explaining learner autonomy is one of the most important factors when there are considerations about predicted or dependent variables.

	Satisfaction	Knowledge Construction	Motivation
Lerner Autonomy	0.0567**	0.21247*	0.2048***
Computer Competence	0.1633	-0.0632	-0.0523
Online Material Interface	-0.0030	0.0748	-0.1444

*** $p < .001$, ** $p < .05$, * $p < .1$

Table 3: Correlation Analysis

From the table above, learner autonomy tends to have low but significant correlation with the level of satisfaction obtained when blended study is introduced. Although this indicator does not show any prediction level, it highly indicates both learner autonomy and satisfaction from study make each other relative high showing a positive association (see Figure 2).

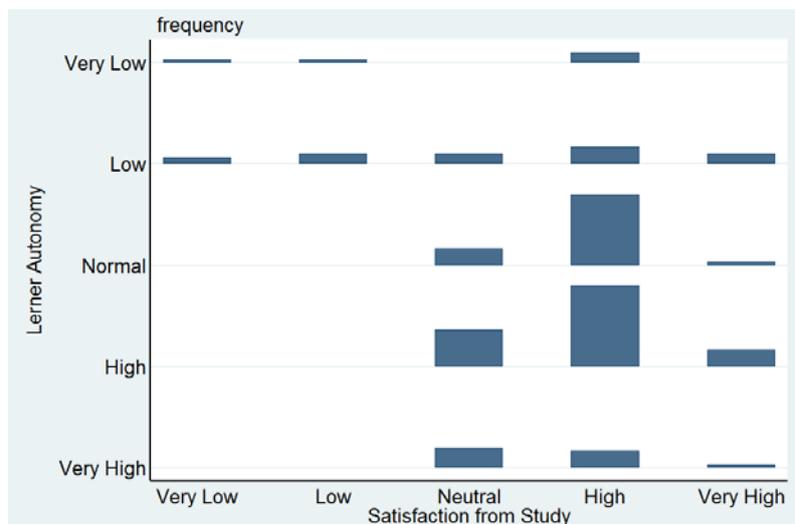


Figure 2: Association between Learner Autonomy and Satisfaction from Study

Another interesting finding is linked with the relationship which exists between learner autonomy and knowledge construction at 10% significant level (See Table-3). This means that both Learner Autonomy and Knowledge Construction rise positively with a statistical significant level (see Figure 3).

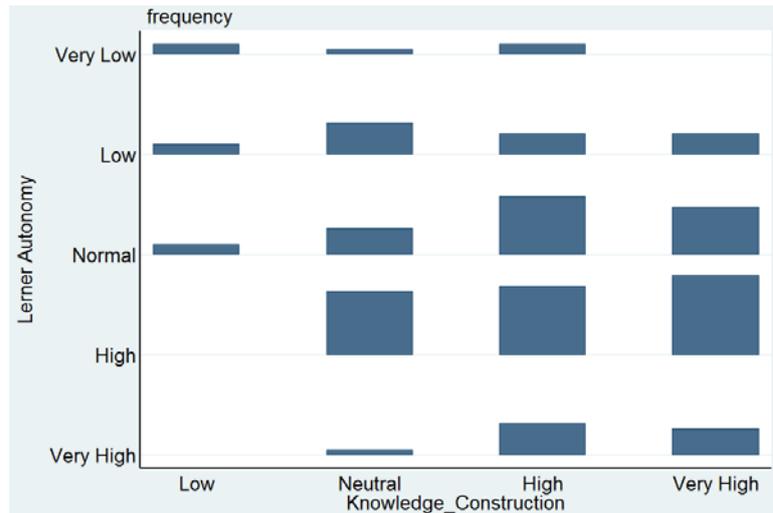


Figure 3: Association between Learner Autonomy and Knowledge Construction

Similarly, both learner autonomy and intrinsic motivation were found to be significant at 1% significant level representing 20% correlation coefficient (see Table 3). In other words, both motivation and learner autonomy may significantly change in the same direction reaching their high or low levels (see Figure 3).

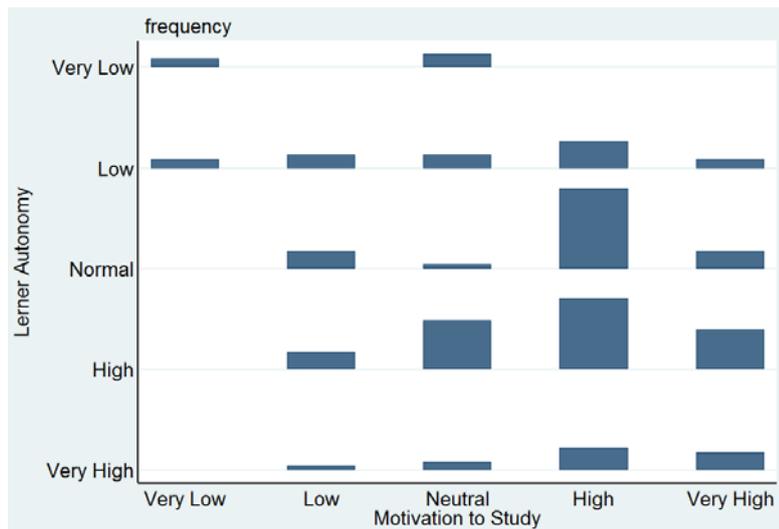


Figure 4: Association between Learner Autonomy and Knowledge Construction

5.2 Regression Analysis

A standard logistic regression analysis was applied considering student characteristics and attitude in order to see their significant level of impact on satisfaction, knowledge construction, and motivation.

	<i>Satisfaction</i>			<i>Knowledge Construction</i>			<i>Motivation</i>		
	β	<i>z</i>	<i>p</i>	β	<i>z</i>	<i>p</i>	β	<i>z</i>	<i>p</i>
Characteristics									
Age	-0.0493	-0.57	0.567	-0.0493	-0.66	0.511	-0.0693	-0.91	0.362
Gender	0.7328	1.71	0.088*	-0.0266	-0.04	0.966	0.6807	1.70	0.090*
Job Position	-0.3681	-0.55	0.584	-0.5938	-1.00	0.318	-0.3111	-0.49	0.628
Student Attitude									
Learner Autonomy	0.1962	0.96	0.337	0.5732	3.03	0.002*	0.5481	2.88	0.004**
Computer Competence	0.3779	1.86	0.063*	-0.1692	-0.92	0.359	-0.1882	-1.00	0.320
Online Material Interface	0.1508	0.75	0.454	0.2430	1.29	0.198	-0.1947	-1.05	0.299

*** $p < .001$, ** $p < .05$, * $p < .1$

Table 4: Ordered Logistic Regression Analysis

From the table below, gender was found to be significant predictor of the level of satisfaction by introducing blended learning materials.

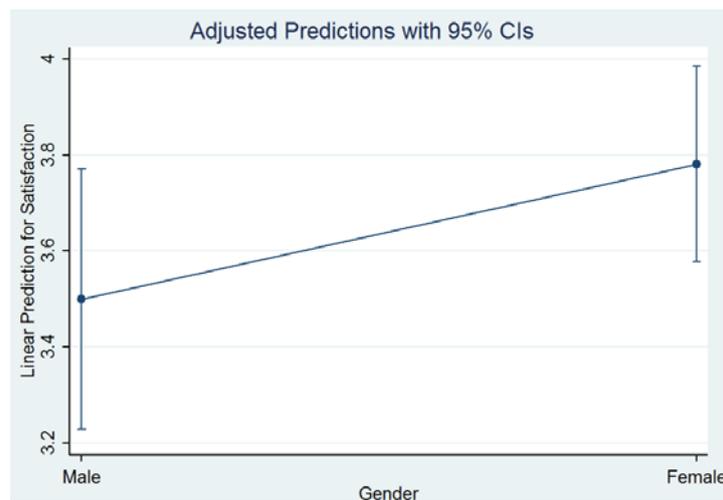


Figure 5: Marginal Effect of Gender on Satisfaction

To be more precise, as the regression coefficients given in the table ordered log-odds by logit coefficients, being a female gender increases the ordered log-odds of reaching in a higher satisfaction category by about 0.088. As Figure 4 specifies satisfaction level prediction probability tends to be higher when female students use blended study materials compared to male students.

Computer competence also significantly predicted student satisfaction level during the academic year of 2017-2018. This is true to say that increasing the level of computer competence by a level (say, from low level to the next higher level) can be a reason to experience **0.063** log-odds of being higher satisfaction level, holding other repressors constant. It also can be seen from Figure-5 getting a higher level of computer competence may cause to have a higher probability of satisfaction existence in the module.

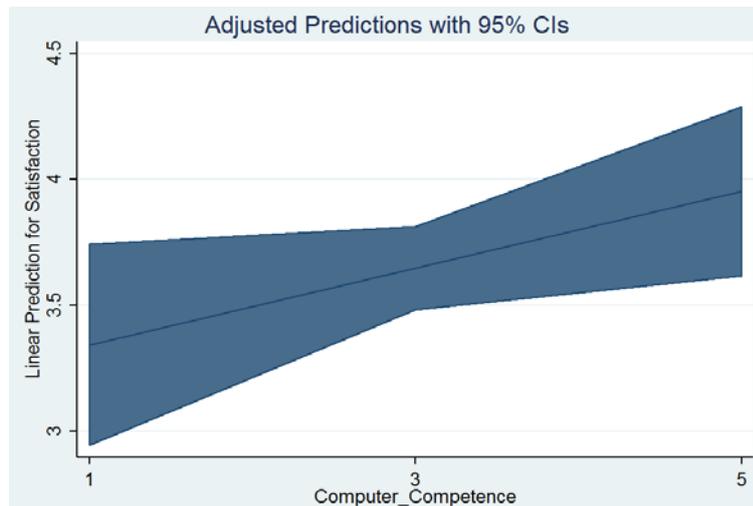


Figure 6: Marginal Effect of Computer Competence on Satisfaction

Moreover, students' learner autonomy has also its significant impact at 5% level. To put it another way, if we increase the level of learner autonomy by one level, it can significantly change the ordered log-odds of being in a higher level of knowledge construction by 0.002 coefficient.

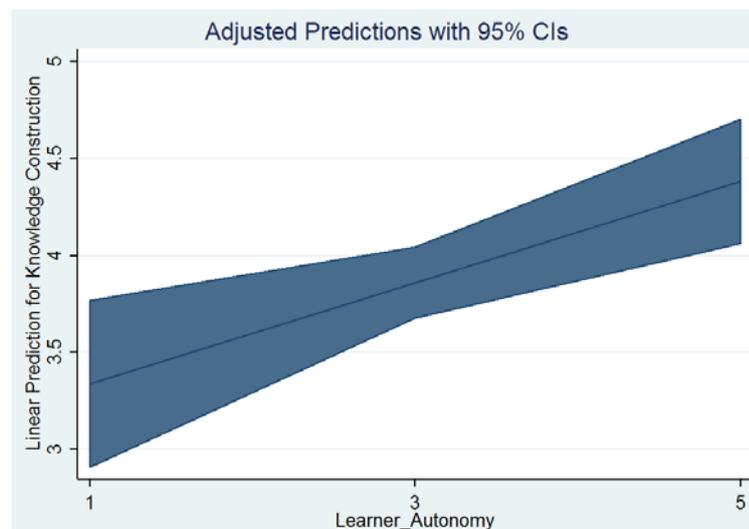


Figure 7: Marginal Effect of Learner Autonomy on Knowledge Construction

These above findings indicate that learner autonomy is likely to increase the level of knowledge construction level mainly among female students.

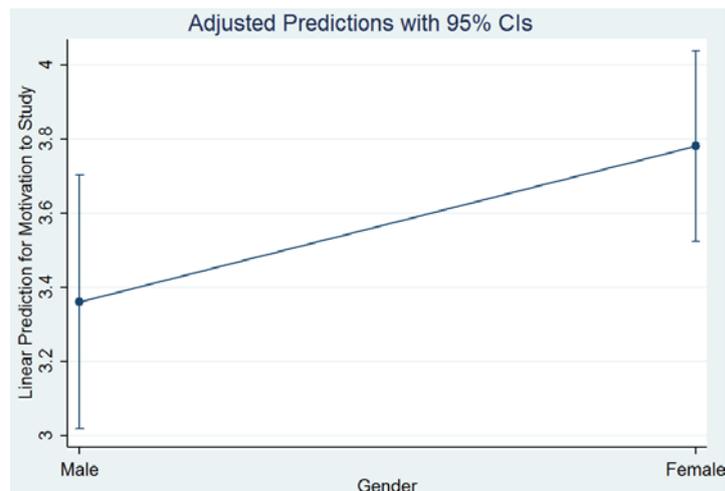


Figure 8: Marginal Effect of Gender on Motivation

In similar to the context of gender impact on the level of satisfaction, it was found that gender impacts on the level of motivation to study at a significant level. Figure- demonstrates that female students are more likely to have a high motivation to study. To be more specific, female students have the ordered log-odds of higher level of motivation by 0.090 coefficient. Practically, learner autonomy has also its significant level by 0.004 of log-odds on the level of intrinsic motivation.

Learner autonomy was found to be statistically significant to change both knowledge construction and motivation showing how much learner autonomy is important to support blended learning for any curriculum at the University.

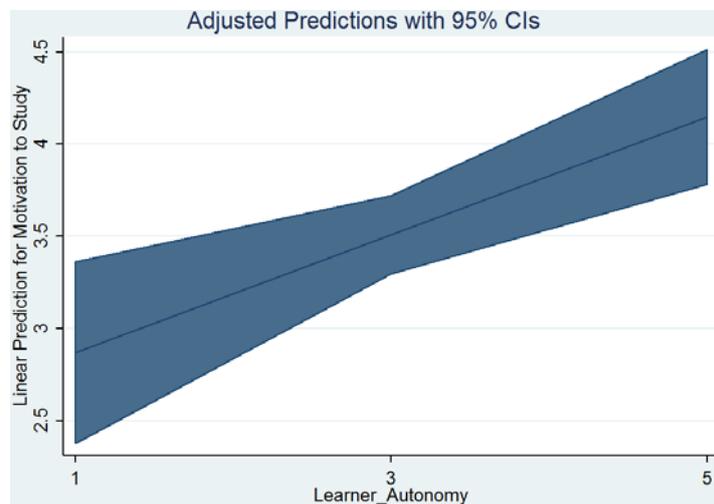


Figure 9: Marginal Effect of Learner Autonomy on Motivation

6 Conclusion and Recommendations

In agreement with Selim (2007), a positive attitude towards e-learning studies is regarded as an important factor to realize the success of studying. For the case of computer skills competence, Kintu et al. (2017) found that these types of skills are antecedent factors representing learning process effectiveness. In this study, it was found that computer competence is crucially important; however, this independent variable has statistically significant impact on satisfaction. Interestingly, computer competence had a negative im-

pact on both knowledge construction and intrinsic motivation without any significant level. Meantime, it also allows us to investigate more in order to understand the relationship between computer competence and knowledge construction. Another relevant finding indicates that a lack of computer skills can be considered as a reason to experience a failure in a blended learning (Miglani/Awadhiya 2012).

Focusing on individual characteristics, hours of employment can impede the process of learning for learners who take any online materials (Cohen et al. 2012). Another similar finding by Packham et al. (2004) shows that employment status and management support can determine the success of online studies. Contrary to this finding, job position was not statistically significant at any level. Nevertheless, without any job position level, students' responses point to only negative impact on three outcomes. In line with Coldweel et al. (2008), age difference does not make any statistically significant change on dependent variables.

An effective blended learning has already become an integral part of innovative teaching methods in current pedagogical approaches. In this case, an examination of learner and environmental characteristics with design, features, and user-friendly interfaces play a significant role in determining the effectiveness of blended-study. Student characteristics and related features of blended study deal with in this study are important determinants in order to organize a good blended learning. However, the gaps are still open for further investigations where there should be different efforts on understanding other significant predictors of blended learning effectiveness. Meantime, current included variables for the investigation should be analyzed in order to explain with their significance levels.

From this research, researchers may manifest high potential to take on blended learning focusing on different characteristics. Meantime, blended learning characteristics meant to increase learners' level of knowledge construction improving the knowledge diffusion. Considering above findings, it is recommended that the implementation of blended study should consider students characteristics and other related external factors that are directly linked with blended study. Meantime, outcome variables including satisfaction, knowledge construction, and motivation should always be considered in order to sustain blended teaching methods.

Bibliography

- Acock, A. (2014): A Gentle Introduction to Stata. Fourth Edition, Stata Press.
- Allen, I./Seaman, J. (2010): Learning on demand: Online education in the United States, 2009. In: Newburyport, MA, The Sloan Consortium, from: http://sloanconsortium.org/publications/survey/learning_on_demand_sr2010 (05.05.2018).
- Ashu, M./Ashish, K. (2012): Mobile Learning: Readiness and Perception of Teachers of Open Universities of Commonwealth Asia. In: Journal of Learning for Development, 4(1): pp. 58-71, from: <https://files.eric.ed.gov/fulltext/EJ1141535.pdf> (27.04.2018).
- Bersin and Associates (2003): Blended learning: What works? An industry study of the strategy, implementation, and impact of blended learning. Oakland: Bersin and Associates.
- Bielawski, L./Metcalf, D. (2005): Blended learning: Integrating Knowledge, Performance Support, and Online Learning. Amherst: HRD Press.
- Bonk, C./Graham, C. (2003): The Handbook of Blended Learning: Global Perspectives, Local Design. Pfeiffer Press.

- Cohen, K./Stage, F./Hammack, F./Marcus, A. (2012): Persistence of master's students in the United States: Developing and testing of a conceptual model. USA: PhD Dissertation, New York University.
- Coldwell, J./Craig, A./Paterson, T./Mustard, J. (2008): Online students: Relationships between participation, demographics and academic performance. In: *The Electronic Journal of e-learning*, 6(1): pp. 19–30, from: <file:///C:/Users/User/Downloads/ejel-volume6-issue1-article57.pdf> (20.03.2018).
- Daniels, H./Moore, D. (2000): Interaction of cognitive style and learner control in a hyper-media environment. In: *International Journal of Instructional Media* 27(4): pp. 1–15.
- Doherty, P. (1998): Learner control in asynchronous learning environments. In: *Asynchronous Learning Networks Magazine*, 2(2), from: <http://www.aln.org/publications/magazine/v2n2/doherty.asp> (28.03.2018).
- Driscoll, M. (2002): Blended learning: Let's get beyond the hype. In: *E-learning*, 3(3), from: <http://www.itimagazine.com/itimagazine/article/articleDetail.js?id=11755> (02.04.2018).
- Garrison, D./Kanuka, H. (2004): Blended learning: Uncovering its transformative potential in higher education. In: *Internet and Higher Education*, 7(2): pp. 95–105, from: <https://www.sciencedirect.com/science/article/pii/S1096751604000156> (03.03.2018).
- Graham, C./Allen, S./Ure, D. (2003): Blended Learning Environments: A review of the research literature. Unpublished manuscript, Provo, UT.
- Graham, C./Allen, S. (2005): Blended learning: An emerging trend in education. In Howard, C./Boettcher, J./Justice, L./Schenk, K./Rogers, P./Berg, G. (Eds), *Encyclopedia of distance learning*: pp. 172-179. Hershey: Idea Group.
- Gujarati, D. (2011): *Econometrics by Example*. Palgrave Macmillan.
- Hadad, W. (2007): ICT-in-education toolkit reference handbook. In: *InfoDev Innovations and Entrepreneurship*, from: <http://www.infodev.org/articles/ict-education-toolkit-reference-handbook>
- Hannafin, M. J. (1984): Guidelines for using locus of instructional control in the design of computer-assisted instruction. In: *Journal of Instructional Development* 7(3): pp. 6–10, from: <https://link.springer.com/article/10.1007/BF02905753> (04.04.2018).
- Hoffman, J. (2014): Solutions to the top 10 Challenges of Blended Learning. In: *InSync Training*, from: <https://www.insynctraining.com/pages/SolutionstotheTop10ChallengesofBlendedLearning.pdf> (30.03.2018).
- Holmberg, B. (1995): *Theory and Practice of Distance Education*. London: Routledge.
- Jung, I. (2001): Building a Theoretical Framework of web-based instruction in the context of distance education. In: *British Journal of Educational Technology*, 32(5): pp. 525 – 534, from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-8535.00222> (24.03.2018).
- Kearsley, G. (2000): *Online education: learning and teaching in cyberspace*. Belmont: Wadsworth.
- Keegan, D. (1996): *Foundations of distance education*. London: Routledge.
- Kenney, J./Newcombe, E. (2011): Adopting a blended learning approach: Challenges, encountered and lessons learned in an action research study. In: *Journal of Asynchronous Learning Networks*, 15(1): pp. 45–57, from: <https://eric.ed.gov/?id=EJ918218> (23.03.2018).
- Kintu, M./Zhu, Ch./Kagambe, E. (2017): Blended learning effectiveness: the relationship between student characteristics, design features and outcomes. In: *International Journal of Education Technology in Higher Education*. 14(7), from: <https://educationaltechnologyjournal.springeropen.com/track/pdf/10.1186/s41239-017-0043-4> (22.03.2018).

- Lin, B./Vassar, J. (2009): Determinants for success in online learning communities. In: *International Journal of Web-based Communities*, 5(3): pp. 340–350, from: <http://www.inderscience.com/info/inarticle.php?artid=25210> (24.02.2018).
- Lim, D./Morris, M./Kupritz, V. (2007): Online vs. Blended Learning: Differences in Instructional Outcomes and Learner Satisfaction. In: *Journal of Asynchronous Learning Networks*, 11(2): pp. 27-42, from: <https://eric.ed.gov/?id=EJ842695> (24.04.2018).
- Lynch, R./Dembo, M. (2004): The Relationship Between Self-Regulation and Online Learning in a Blended Learning Context. In: *The International Review of Research in Open and Distributed Learning*, 5(2), from: <http://www.irrodl.org/index.php/irrodl/article/view/189/271> (23.03.2018).
- Means, B./Toyama, Y./Murphy, R./Baki, M. (2013): The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature. In: *Teachers College Record*, Columbia University, 115, from: https://s3.amazonaws.com/academia.edu.documents/43209482/study_online_and_blended_learning.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1527684573&Signature=oVAp%2FFu7rSETUzUPgbTOInDGiA4%3D&response-content-disposition=inline%3B%20filename%3DStudy_online_and_blended_learning.pdf (20.03.2018).
- Oh, E./Lim, D. (2005): Cross relationships between cognitive styles and learner variables in online learning environment. In: *Journal of Interactive Online Learning*, 4(1): pp. 53–66, from: <http://www.ncolr.org/jiol/issues/pdf/4.1.4.pdf> (25.04.2018).
- Orey, M. (2002): Definition of blended learning. University of Georgia.
- Oxford Group (2013): Blended learning-current use, challenges and best practices. In: *Oxford Group Report*, from: <https://www.kineo.com/m/0/blended-learning-report-202013.pdf> (28.03.2018).
- Packham, G./Jones, P./Miller, Ch./Thomas, B. (2004): E-learning and retention key factors influencing student withdrawal. In: *Education and Training*, 46(6–7): pp. 335–342, from: <https://www.emeraldinsight.com/doi/pdfplus/10.1108/00400910410555240> (23.03.2018).
- Peters, O. (1998): *Learning and Teaching in Distance Education: Analyses and interpretations from an international perspective*. London: Kogan Page.
- Picciano, A. (2006): Blended Learning: Implications for Growth and Access. In: *Journal of Asynchronous Learning Networks* 10 (3): pp. 95-102, from: <https://files.eric.ed.gov/fulltext/EJ918218.pdf> (24.04.2018).
- Pintrich, P. (2000): The role of goal orientation in self-regulated learning. In: Boekaerts, M./ Pintrich, P./Zeidner, M. (Eds.) *Handbook of Self-Regulation*: pp. 452-502. San Diego, CA.: Academic Press.
- Reay, J. (2001): Blended learning – a fusion for the future. In: *Knowledge Management Review*, 4(3): p.6.
- Rooney, J. (2003): Blending learning opportunities to enhance educational programming and meetings. In: *Association Management*, 55(5): pp. 26-32.
- Rossett, A. (2002): *The ASTD e-learning handbook*. New York: McGraw-Hill.
- Schrum, L./Hong, S. (2002): Dimensions and Strategies for Online Success: Voices from experienced educators. In: *Journal of Asynchronous Learning Networks* 6(1): pp.57-67, from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.109.3649&rep=rep1&type=pdf> (24.04.2018).
- Selim, H. (2007): Critical success factors for e-learning acceptance: Confirmatory factor models. In: *Computers and Education*, 49(2): pp. 396–413, from: <https://pdfs.semanticscholar.org/074d/89d97d90149e6dc5680cae1436e64115a008.pdf> (01.05.2018).
- Sergiovanni, T. (1994): *Building Community in Schools*. New York: Jossey-Bass.

- Singh, R./Reed, C. (2001): A white paper: Achieving success with blended learning. In: Centra Software, from: <https://maken.wikiwijs.nl/userfiles/f7d0e4f0bd466199841ede3eea221261.pdf> (10.05.2018).
- Sitzmann, T./Kraiger, K./Stewart, D./Wisher, R. (2006): The comparative effectiveness of web-based and classroom instruction: A meta-analysis. In: *Personnel Psychology*, 59: pp. 623–664, from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.509.1668&rep=rep1&type=pdf> (20.03.2018).
- Thomson, I. (2002): Thomson job impact study: The next generation of corporate learning, from: <http://mdavidmerrill.com/Papers/ThompsonJobImpact.pdf> (25.03.2018).
- Young, J. (2002): Hybrid teaching seeks to end and divide between traditional and online instruction. In: *Chronicle of Higher Education*, 48 (28): pp. A33-A34, from: <https://eric.ed.gov/?id=EJ645445> (20.03.2018).
- Wang, A./Newlin, M. (2002a): Predictors of Web-Student Performance: the role of self-efficacy and reasons for taking an on-line class. In: *Computers in Human Behavior*, 18(2): pp. 151–163, from: <https://www.sciencedirect.com/science/article/pii/S0747563201000425> (20.02.2018).
- Wang, A./Newlin, M. (2002b): Predictors of performance in the virtual classroom. In: *The Journal Online*, 29(10), from: <https://thejournal.com/articles/2002/05/01/predictors-of-performance-in-the-virtual-classroom.aspx> (05.02.2018).