University Students` Satisfaction: The Impact of Computer-mediated Blended Learning

Olha REMBACH¹,
Oleksandr LIUBYCH²,
Mykhajlo ANTONENKO³,
Volodymyr KOVALENKO⁴,
Ruslan VALIEIEV⁵

¹ PhD in Pedagogical sciences, Docent, Associate Professor of the Khmelnytsky Leonid Yuzkov University of Management and Law, Khmelnytsky, Ukraine, olgaorcid@ukr.net

² PhD in History, Docent, Associate Professor of the Academy of State Penitentiary service, Chernihiv, Ukraine, Lubich.Sasha@ukr.net

³ PhD in History, associate professor of legal studies department, faculty of law of the Volodymyr Dahl East Ukrainian National University, Severodonetsk, Ukraine, antm723@gmail.com

⁴ PhD in Law, Docent, scientific secretary of the secretariat of the Scientific Council Luhansk State University of Internal Affairs named after E. Didorenko, Severodonetsk, Ukraine, kvvkrimludv@ukr.net

⁵ PhD in Pedagogical sciences, Associate Professor of Police Tactics Department of Dnipropetrovsk State University of Internal Affairs, Dnipro, Ukraine, osvitne.pravo@gmail.com

Abstract: *Penitentiary systems in transition countries are in a state of reform. This factor imposes additional difficulties in the vocational training of future probation and correctional officers. Improving the process of their instruction at universities should consider the condition of their satisfaction and efficiency of modern educational technologies. During the experiment, the online intranet course was implemented in the educational process. This course oriented to the stimulation of students` emotional-motivational states, facilitation of cognitive abilities and using of practice-oriented educational exercises for autonomous learning. The student satisfaction was measured with SUSS – the Students University Satisfaction Scale (Cronbach's alpha coefficient $\alpha=0.90$). At the end of the experiment, t-test (with independent samples) displayed that students of the experimental group ($n=82$) had significantly higher scores for students` satisfaction than the students of the control group ($n=82$, $t=4.24$), especially satisfaction with curriculum ($t=7.78$), teaching and learning ($t=7.65$). The results of the study confirm the effectiveness of blended learning, in particular, the Station-Rotation model, to increase students' motivation and satisfaction. Practical implications include the implementation of online courses in basic academic disciplines in the training of Ukrainian probation and correctional officers. Instructional Design Implications include further study of the realized techniques, methods and models of blended learning.*

Keywords: *student satisfaction; blended learning; e-learning; correctional officer training; probation officer training; parole officer training; SUSS.*

How to cite: Rembach, O., Liubych, O., Antonenko, M., Kovalenko, V., Valieiev, R. (2019). University Students` Satisfaction: The Impact of Computer-mediated Blended Learning. *Revista Romaneasca pentru Educatie Multidimensională*, 11(4 Supl. 1), 221-241. doi:10.18662/rrem/186

1. Introduction

Universal Declaration of Human Rights proclaims that all human beings are born free. Everyone has the right to liberty; no one shall be subjected to cruel, inhuman or degrading punishment. At the same time, human society is forced to maintain institutions of criminal punishment, probation and imprisonment.

Moreover, in a number of countries in transition, the functioning of these institutions is often associated with a violation of human rights. In the judgments delivered in 2018 by the European Court of Human Rights, 24.1% of the violations concerned rights to a fair hearing, 18% – prohibition of torture and inhuman or degrading treatment, 16.34% – rights to liberty and security, 11.55% – rights to an effective remedy.

Many of these violations were committed in penal and correctional institutions. Occupational tasks and duties of jail correctional officers, probation employees, parole officers, county jail officers are numerous and diverse. Among them: oversee inmate compliance of rules, regulations and keep order inside prisons; keep security by preventing disorders, attacks, and jailbreaks; oversee casual actions of prisoners; settling disputes between convicts; report on inmate conduct and filling out daily journals detailing prisoner actions and events occurred during their shift; rehabilitation help and counseling of inmates; check housing units, cells and other locations and ensuring all areas are kept to facility standards. In addition, officers must maintain a level of physical fitness; administer first aid; focusing on averting the risk of recidivism. Ukrainian correctional officers also investigate criminal cases.

Given the wide range of tasks and responsibilities, the occupational education of correctional officers includes various areas, in particular, legal, psychological, physical, tactical, special professional training. This led to the search for effective educational forms, methods, tools, and technologies. In recent years, information technology has become an effective pedagogical tool. The current rapid breakthroughs in new digital technologies will further modify the way of knowledge development, perception, delivery and it implies prospects to innovate educational content and instruction methods, - stated on World declaration on higher education for the twenty-first century, which was adopted by UNESCO. So, the occupational training of the Ukrainian correctional, parole and probation officers active introduces modern information technologies. In particularly the Academy of the State Penitentiary Service provides combination of computerised didactic

components into the common educational environment. The authors consent with Horn and Staker (2015) that blended learning is the driving force of student-centered learning.

At the same time, feedback from students and graduates remains an important problem in modern higher education. There are also various ways to evaluate of education quality. However, the authors are impressed by the concept of student satisfaction. It complies with the values of the student-centered approach and brings the field of education closer to the service sector, which takes care of customer satisfaction.

Thus, the authors consider it necessary to study the effect of computer-mediated hybrid learning on the satisfaction of cadets who are being trained as a penitentiary officer.

Study of literature testified that Ukrainian experts have investigated several deprivation and frustration factors of the penitentiary system employees' job. Firstly, this is high psycho-emotional stress due to prolonged contact with the criminogenic microenvironment and the need to resist the values of the criminal subculture, and secondly, the consideration of the non-prestige of the profession (Pekarchuk, Valieiev, & Zozulia, 2018).

It should be noted that these negative stressors are inherent in penitentiary systems in developed countries. In particular, Lambert and Paoline (2008) regard job in correctional institutions as a depressing activity, which is unvalued by the society. Scientists emphasize the endless circle, when working conditions in prisons cause feelings of anxiety and professional burnout in workers, which in turn results in personnel turnover (Lambert and Paoline, 2010; Castle, 2008, etc.). In turn, a permanent shortage of personnel leads to chronic overtime work, vacation time misuse (Leip and Stinchcomb., 2013), which increases the negative impact on the motivation of corrections officers.

Accordingly, vocational training and education of penitentiary officers has been the focus of researchers' attention for a long time. So, more than half a century ago Clarence M. Leeds (1951), stated the necessity of special training for probation officers and Louis J. Sharp (1951) characterized four general areas of training in the probation and parole field, in particular, academic education in professional school and in-service training. Subsequently, in the USA in the 1950's the National Probation and Parole Association recommended that all probation officers hold a bachelor's degree. Afterwards Chris W. Eskridge (1979) made a critical assessment of probations officers' education and training. Dianne Carter (1991) defined the status of education and training in corrections realm. Some negative trends in the field of correctional officers' education

investigated by Meryl Aldridge (1999). James Treadwell provided a reflection about graduates` comments on the training of British probation officers. He revealed the definite strain formed by a discrepancy between the needs of the penitentiary organization and the demands of the university. Treadwell (2006) argued this diversity is aggravated by the disparity between the vocational and academic elements of penitentiary officer education.

Modern researchers have proposed many innovative approaches to correctional, parole and probation officers` training. So, Bonta, Bourgon, Rugge, Scott, Yessine, Gutierrez, & Li (2011) assessed an educational program for penitentiary employees based on the model of criminal rehabilitation. Charlotte Knight & Brian Stout (2009) proposed some arguments for an integrated approach to probation and offender manager training: These authors emphasized the significance of higher education in the progress of critical thinking, reflective competence for penitentiary officers. Lowenkamp, Holsinger, Flores, & Koutsenok (2013) studied the training experience of changing probation officer attitudes.

Many experts have studied various aspects of online training for future and current penitentiary staff. So, Carrie E. Layman (2015) established the benefits of e-learning for the parole and probation department and its agents. Davies & Durrance (2009) have studied the experience of learners and teachers in probation training. Concerning instructional approaches, they stated there is a powerful reason for blending of penitentiary education. So, blended learning keeps the advantages of direct teacher-student interaction and at the same time expands the use of electronic learning which provides flexibility and variability of learning time, place, tempo and styles.

Also, Jane Dominey (2010) and Keith Davies (2011) argued that in-company electronic training can be a suitable approach for teaching of penitentiary employees. Caroline Skinner and Rachel Goldhill (2013) generalized their lecturers` experience. They reported that the academic component of the Probation Qualification Framework was studied using blended learning. The main methods were online lectures, traditional workshops and written works.

Really, blended learning became a popular pedagogical concept and widespread educational practice. As stated Boelens, De Wever, and Voet (2017) the idea of merging traditional class with electronic learning in pedagogical theory and practice is not new and since the information revolution in education, responding educational models has been realized and analyzed constantly. Charles R. Graham (2006) defined blended learning

as approaches combine traditional classroom learning and instruction with computer-mediated learning and instruction.

When studying literature, the authors also were selecting specific aspects of blended learning available for measurement. Noteworthy conception by Yiran Zhao and Lori Breslow (2013). They following Carole A. Twigg and categorized four types of blended learning courses: replacement model, when traditional lectures are replaced at least partly by online content. Respectively, time of traditional lessons is reduced. This model first provides for students to watch online lectures and then the classroom work. In this replacement model resembles so-called “flipped class”. The supplemental model places additional material on online resources. In the emporium model, students learn solely online without face-to-face meetings but the teacher provides on-demand help. The buffet model offers learners the opportunity to choose a plentiful menu of educational activities in both classroom and distant mode.

When choosing a model, we also regard the conclusions by Ma’arop and Embi (2015). They revealed that among the challenges faced by blended learning in transition societies are increased instructors’ workload and lack of pedagogical and technical skills to conduct online teaching.

We opted for the rotation model of blended learning. How Staker and Horn (2012) defined it is a program in which within a given course learners switch on a timetable or at the instructor’s decision between educational modalities, one of which is distant training. For using a local computer network the most reasonable is the Station-Rotation model. These stations might include small-group activities, full-class training, collaborative projects, discussions, individual tutoring, writing tasks, computer-mediated instruction, teacher-led instructions. Regarding the current situation in Ukraine, we agreed with Iryna Liashenko & Lyudmyla Hnapovska (2019) that most of the contemporary students understand enough the blended learning model and feel positively about it.

We also selected specific local aspects of blended learning environment available for measuring. For example, Wang, Han, & Yang (2015) interpreted blended learning as a system consisting of six crucial parts: the learner, the teacher, the institution, the technology, the content, and the learning support. Each of these subsystems connected to each other, but can be investigated separately. Effective for use in research is also an approach to decomposition of different types of interactions in e-learning. So, Michael Moore and Greg Kearsley (1996) developed the typology of online interaction, namely student-teacher interaction, student-student interaction, student-content interaction. The fourth type of distance

interaction (i.e. student-technology) was identified by Hanna, Dudka, and Runlee (2000). It is noteworthy that these four types were used by Elaine Strachota (2006) for the development of the tool to measure student satisfaction.

Student satisfaction can be definite as the learner's perception of the university experience and perceived importance of the scholarship obtained in the corresponding organization (Bolliger, 2004). This concept complies with the values of the student-centered educational paradigm and brings the field of education closer to the service sector, which takes care of customer satisfaction.

In recent years, researchers have identified high students' satisfaction with distance and blended courses (Navarro (2000), Palmer & Holt (2009), Krsmanovic, Djuric, & Dmitrovic (2012), Vernadakis, Giannousi, Tsitskari, Antoniou, & Kioumourtzoglou (2012), Cole, Shelley, & Swartz (2014) and others).

We formulated a hypothesis considering the above factors, namely: the complexity of the professional activities of correctional, parole and probation officers, the importance of student satisfaction for productive mastery of professional competencies, the effectiveness of blended and e-learning. **Hypothesis:** Satisfaction of university students who learn for further work as penitentiary officers can be significantly improved through the development of blended learning with some online education technologies.

The aim of the study is to determine the level of Ukrainian students' satisfaction at penitentiary university and boost it via the implementation of blended learning with online course.

2. Materials and Methods

2.1. Participants

There were 164 participants involved in our experiment. They are students (cadets) of the Academy of State Penitentiary Service (Chernihiv, Ukraine). The age of participants in the experimental group was 18 to 20 years old ($M = 18.45$, $SD = 0.5$).

On the preliminary stage participated 88 students (44 male and 44 female) of three variate years of education. The age of participants in this stage was 17 to 22 years old ($M = 18.31$, $SD = 1.03$).

The experimental group included 40 male students (48.7%) and 42 female students (51.3%). The control group included 41 male students (50%) and 41 female students (50%). The two groups of students did not show

statistically significant differences in the distributions according to the gender, age, results of entrance exams and last examination term. All cadets voluntarily agreed to participate in the study.

2.2. Instruments

The data were collected in 2019 at the Academy of State Penitentiary Service (Ukraine). Participation in the study was voluntary. Full confidentiality of data and anonymity were guaranteed.

The Students University Satisfaction Scale (SUSS; Hussain & Bhamani, 2012a) was used to collect the data. This questionnaire was translated and adapted into Ukrainian by a classical translation procedure by independent bilingual judges.

The 32 items regarding the two areas of academic satisfaction were scored on a 3-point rating scale (never=1, sometimes=2, always=3). First area, the academic quality scale measured satisfaction from learning facility (for example, "I find classrooms well equipped with educational resources"), from curriculum (for example, "I am satisfied with the time allocation for assignment submission"), from teaching and learning (for example, "Teachers are generally student friendly and focus on specific individual needs"). Second area, the university facilities scale measured satisfaction from university culture (for example, "I am satisfied with the students' counseling services at my university"), from administrative facility (for example, "I find quality, hygienic and affordable food in the university's cafeteria"), from policy and procedures (for example, "There is a wide range of scholarship opportunities for students"). Cronbach's alpha coefficient was good in this study ($\alpha=0.90$ and standardized $\alpha=0.96$).

The experiment consisted of two stages. The first stage included a primary measurement of students' satisfaction and the design of the online course. The second stage included selecting the experimental and control groups, implementation blended learning with the online course and re-measuring students' satisfaction.

2.3. Data Analysis

The collected results were processed with StatSoft Statistica software. The authors construct scatterplot and boxplot to test the normality of the collected data distribution. For this purpose, were also used the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The t-test was used to compare two independent samples. (experimental and control group). Fisher's criterion $p \leq 0.05$ was applied to confirm statistical significance of the

collected data. The study used a correlation analysis (with the Pearson correlation coefficient) of different aspects of satisfaction and some demographic and biographical factors.

3. Results

In the first stage of the experiment the students` satisfaction was pre-measured. No strong statistically significant correlations were found between gender, age, academic results, and the three components of the academic quality scale (satisfaction from learning facility, satisfaction from curriculum and satisfaction from teaching and learning). Recognizing the opportunity and necessity to improve students` satisfaction, the university decided to introduce blended learning and design the computer-mediated course.

In the second stage of the experiment after implementation online course the students` satisfaction was measured repeatedly. Descriptive statistics are displayed in Table 1.

Table 1. University students` satisfaction (measuring with SUSS)

	<i>Control group</i>				<i>Experimental group</i>				<i>D</i>	<i>W</i>
	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>SD</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>SD</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Learning Facility (5-15)	11,17	7	15	2,04	12,41	9	15	1,62	0,13**	0,94**
Curriculum (5-15)	10,50	6	15	1,96	12,63	8	15	1,53	0,16**	0,94**
Teaching & Learning (6-18)	13,70	10	18	2,25	16,10	11	18	1,73	0,16**	0,93**
Academic Quality Scale (16-48)	35,37	28	48	4,84	41,15	31	47	3,69	0,09*	0,96**
University Culture (5-15)	10,49	5	15	2,42	11,38	6	15	2,37	0,13**	0,95**
Administrative Facility (5-15)	9,11	5	15	2,37	8,65	5	15	2,65	0,16**	0,95**
Policy & Procedures (6-18)	12,65	8	18	2,83	13,20	8	18	2,69	0,13**	0,95**
University	32,24	22	47	6,61	33,22	22	47	6,62	0,13**	0,95**

	<i>Control group</i>				<i>Experimental group</i>				<i>D</i>	<i>W</i>
	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>SD</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>SD</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Facilities Scale (16-48)										
Total	67,61	50	95	10,91	74,37	54	92	9,42	0,08	0,98**
Satisfaction										
Score (32-96)										

Note. *Mean* – average mean, *Min* – minimum values, *Max* – maximum values, *SD* – standard deviation, *D* - Kolmogorov-Smirnov test, *W* - Shapiro–Wilk test, ** - $p < 0.01$, * - $p < 0.05$

During the study were constructed histograms and plots with the main variables. The Kolmogorov-Smirnov test and the Shapiro–Wilk test (table 2, column 9 and 10) revealed the normal distribution of the collected data. The normality of the data distribution also displayed in figure 1 (Academic Quality Scale plot) and figure 2 (Total Satisfaction Score histogram).

Fig. 1. Academic Quality Scale: normality of data distribution

Fig. 2. Total Satisfaction Score: normality of data distribution

T-test analysis (with two independent samples) was applied to compare cadets' satisfaction in the experimental group and the control group. With that, the level of statistical significance was determined at 0.05.

Independent sample t-test displayed that students of the experimental group had significantly higher scores for students' satisfaction than the students of the control group ($t=4.24$), especially satisfaction with curriculum ($t=7.78$), teaching and learning ($t=7.65$). Results of t-test analysis are displayed in table 2.

Table 2. T-test analysis of students' satisfaction level in the experimental and control groups

	<i>t-value</i>	<i>p-value</i>
	1	2
Learning Facility	4.32	0.00
Curriculum	7.78	0.00
Teaching & Learning	7.65	0.00

	<i>t-value</i>	<i>p-value</i>
	1	2
Academic Quality Scale	8.59	0.00
University Culture	2.38	0.02
Administrative Facility	-1.18	0.24
Policy & Procedures	1.27	0.20
University Facilities Scale	0.94	0.35
Total Satisfaction Score	4.24	0.00

4. Discussion

The authors agreed with the awareness of blended learning as a synergetic concept of enriching educational experience of learning process subjects (Danysko & Semenovska, 2018). The synergistic effect due to the foundation of the educational environment. The centerpiece of this environment is the online course. In general, the authors associate the positive results of present experiment with the careful designing of the electronic course.

This course was designed based on the typology of student interactions in a virtual learning environment (student-content, student-teacher student-student, student-technology (Moore and Kearsley (1996), Hanna et al. (2000)). Also, in designing the course, ideas about electronic learning tools` functioning were used. Among such ideas are: stimulation of students` emotional-motivational states, facilitation of cognitive abilities, implementation of practice-oriented educational exercises for autonomous learning (Valieiev (2013).

So, to stimulate positive emotional and motivational states and facilitate analysis and synthesis operations, educational content is presented in different modalities and forms: text; video lectures; illustrative and cognitive graphics, including mind maps; interactive visual schemes with drag-n-drop operations; educational clarification animation; interactive multimedia presentations, etc. The experimental testing of learning animation by Oleksandr Aleksieiev, Mykola Korotun, and Dmytro Trebukhov (2018) identified a statistically significant change in the ratio between internal and external motives of modern Ukrainian students.

The course actively used video materials from surveillance cameras, officers' body-worn cameras. Various ways of presenting educational content are aimed at reducing their fatigue by switching attention to different modalities

(text, sound, graphics, video, etc.). During the implementation of the course, the conclusions of Ya. Hlynsky, and V. Ryazhska (2016) were used. These researchers analyzed the proper online learning video resource in higher education. In their opinion the introduction of video resources enables to devote valuable teacher-student interactions to the most difficult questions. This is due to preliminary and autonomous student work with video resources.

For the organization of practice-oriented educational tasks that cannot be implemented in traditional full-time study, collective projects are implemented. These tasks require an Internet search and teamwork skills. Also implemented tasks on the analysis of real cases and filling the database, which was previously created by the teacher. The idea of such tasks is taken from the experience of Karchevskyi (2017). As he revealed on the example of police cadets' blended learning, the distant technologies provide approaches to solving the problem of reducing the auditorium load and organizing effective independent work.

The authors designed interactive dialogue simulators that provide chain of scene with a virtual character who "addresses" a cadet with some typical job problem. The scenario development depends on the choice of student actions.

The design of educational content is carried out in accordance with the demands of modern scientific research on the pedagogical design, usability and psychology of IT users, namely: the conciseness of the educational text, its structure, simplicity, ensuring functional navigation, error tolerance, balance of the imagery; using a unified user interface, providing a situational helpdesk system, and more. An important role in blended learning was played by virtual forums in which teachers organized discussions about the most problematic aspects of learning content. This fact was also recently confirmed by Oliynik, Samoylenko, Batsurovs'ka, & Dotsenko (2018).

The computer-mediated course was realized with iSpring software as intranet online course and primary model of blended learning was Station-Rotation model (Staker & Horn, 2012). So, the students rotate at the instructor's discretion among classroom-based learning methods: face-to-face instruction, small-group projects and online activities.

The improvement of learning outcomes as a result of the introduction of blended learning is reported by many experts. Among recent studies, we note the study of Ukrainian cadets of future border guards (Balendr, Komarnytska, Bloshchynskyi, & Didenko, 2018) and future teachers (Kizim, 2018).

Some progress in student satisfaction of the experimental group compared with the control group is shown in Figure 3.

Fig. 3. Score of student satisfaction in the experimental and control group

Note. 0.0 – control group, 1.0 – experimental group

T-test analysis revealed a statistically significant difference in the student satisfaction in the experimental and control group (table 2). Students of the experimental group were more satisfied with academic quality, in particular, with learning facilities, curriculum, teaching and learning. They also showed a higher total score of satisfaction.

These findings are consistent with the conclusions of other scientists. As noted earlier, recent studies (Navarro, (2000), Palmer & Holt, (2009), Krsmanovic et al. (2012), Vernadakis et al. (2012), Cole et al. (2014)) have found that e-learning and blended learning have a positive effect on student satisfaction.

The study used a correlation analysis of different aspects of satisfaction and some demographic and biographical factors. The correlation analysis was performed by the Pearson correlation coefficient (table 3). The statistical

significance of the collected data was confirmed at alpha level 0.05 according to Fisher's criterion.

Table 3. Correlation analysis of students' satisfaction

	Learning Facility	Curriculum	Teaching & Learning	Academic Quality	University Culture	Administra- tive Facility	Policy & Procedures	University Facilities Scale	Total Satisfaction Score
	1	2	3	4	5	6	7	8	9
Learning Facility	1	0,37	0,41	0,71	0,34	0,36	0,29	0,38	0,58
Curriculum	0,37	1	0,70	0,85	0,58	0,30	0,55	0,56	0,76
Teaching & Learning	0,41	0,70	1	0,88	0,66	0,29	0,65	0,62	0,81
Academic Quality	0,71	0,85	0,88	1	0,65	0,38	0,62	0,64	0,88
University Culture	0,34	0,58	0,66	0,65	1	0,46	0,75	0,85	0,84
Administrative Facility	0,36	0,30	0,29	0,38	0,46	1	0,59	0,80	0,68
Policy & Procedures	0,29	0,55	0,65	0,62	0,75	0,59	1	0,92	0,87
University Facilities Scale	0,38	0,56	0,62	0,64	0,85	0,80	0,92	1	0,93
Total Satisfaction Score	0,58	0,76	0,81	0,88	0,84	0,68	0,87	0,93	1
Gender (0; 1)	-0,12	-0,05	-	-	-	-0,04	-	-	-0,21**
Average grades (2 – 5)	-0,11	-	0,21**	0,16*	0,30**	-	0,21**	0,21**	-0,18*
		0,16**	-0,03	-0,12	-0,11	0,23**	-0,17*	-0,20*	

Note. ** - $p < 0.01$, * - $p < 0.05$

Thus, female students showed slightly higher satisfaction, including satisfaction with teaching and learning, university culture, policy and procedures. No demographic variable correlated with students' satisfaction investigates Hussain & Bhamani (2012b) – the authors of the SUSS and other researchers, in particular, Cole et al. (2014). At the same time, Solinas, Masia, Maida, & Muresu (2012) revealed the gender statistically significantly affected the students' satisfaction ($p = 0.009$). They identified that male students demonstrate high commitment to learning outcomes. While females revealed the interest in science, the title of degree and the possibility

of a future work. In the study of Fredericksen, Swan, Pelz, Pickett, & Shea, (1999) female students reported higher levels of perceived learning than did male students. Such differences can be explained by various socio-cultural factors. Perhaps the male students were more demanding to aspects of the University Facilities such as University Culture, Policy and Procedures. Maybe the female students were more condescending to teaching and learning. At least such signs were revealed during conversations with students. This, in turn, may be due to the unpopularity of the penitentiary service in Ukrainian women until recently.

A slight correlation was found between average academic grades and such aspects as administrative facilities, policy and procedures, as well as curriculum. These results were unexpected, although Hussain & Bhamani (2012b) hypothesized that the overall students` satisfaction has a significant relation to their academic grades. However, this hypothesis of these authors has not been confirmed. Also, Pike (1991) revealed that student satisfaction exerts more influence on academic performance than the effects of grades on satisfaction. With that Paul Grayson (2004) identified that student satisfaction was related to Grade Point Average. The students' satisfaction with administrative resources can be caused by friendly relations of foremost students with the teaching and administrative staff and, accordingly, the transfer of satisfaction to administrative facilities, policy and procedure

Practical implications include the implementation of online courses in basic academic disciplines in the training of Ukrainian probation and correctional officers. Instructional Design Implications include further study of the realized techniques, methods and models of blended learning: differentiation of student interactions, facilitation of cognitive abilities, implementation of practice-oriented educational exercises, mind maps, interactive visual schemes with drag-n-drop operations, interactive dialogue simulators, etc.

5. Conclusions

1. Improving the vocational training of probation and correctional officers is possible using a computer-mediated course designed to meet the requirements of visual and instructional design, usability. Such course must be oriented to the stimulation of students` emotional-motivational states, facilitation of cognitive abilities and using of practice-oriented educational exercises for autonomous learning.
2. The implementation of the blended learning rotation model has improved the satisfaction of university students with curriculum, teaching and learning, academic quality, as well as total satisfaction score.

References

- The European Court Of Human Rights (2018). ECHR in facts & figures 2018. Available from: https://www.echr.coe.int/Documents/Facts_Figures_2018_ENG.pdf
- UNESCO (1998). World declaration on higher education for the twenty-first century: Vision and action. In World Conference on Higher Education. Ginebra: Unesco. Available from: http://www.unesco.org/education/educprog/wche/declaration_eng.htm
- Aldridge, M. (1999). Probation officer training, promotional culture and the public sphere. *Public Administration*, 77(1): 73-90.
- Aleksieiev, O. M., Korotun, M. M., & Trebukhov, D. V. (2018). The use of animation as a means to increase motivation among students of engineering disciplines. *Information Technologies and Learning Tools*, 65(3):76-90.
- Balendr, A. V., Komarnytska, O. I., Bloschynskyi, I. H., & Didenko, O. V. (2018). Information and communication technologies in foreign languages training of the border guards in the European Union Countries. *Information Technologies and Learning Tools*, 67(5):56-71.
- Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review*, 22: 1-18.
- Bolliger, D. U. (2004). Key factors for determining student satisfaction in online courses. *International Journal on E-learning*, 3(1):61-67.
- Bonta, J., Bourgon, G., Rugge, T., Scott, T. L., Yessine, A. K., Gutierrez, L., & Li, J. (2011). An experimental demonstration of training probation officers in evidence-based community supervision. *Criminal justice and behavior*, 38(11), 1127-1148.
- Carter, D. (1991). The status of education and training in corrections. *Fed. Probation*, 55, 17.
- Castle, T. L. (2008). Satisfied in the jail? Exploring the predictors of job satisfaction among jail officers. *Criminal Justice Review*, 33(1), 48-63.
- Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three year study. *The International Review of Research in Open and Distributed Learning*, 15(6). <http://www.irrodl.org/index.php/irrodl/article/view/1748>

- Danysko, O. V., & Semenovska, L. A. (2018). Genesis and modern content of blended learning concept in foreign pedagogical theory and practice. *Information Technologies and Learning Tools*, 65(3):1-11.
- Davies, K., & Durrance, P. (2009). Probation training: the experience of learners and teachers. *Social Work Education*, 28(2), 204-221.
- Davies, K. (2011). Work-based distance learning for probation practice: Doing the job properly. *Probation Journal*, 58(1), 68-73.
- Dominey, J. (2010). Work-based distance learning for probation practice: Doing the job properly. *Probation Journal*, 57(2), 153-162.
- Eskridge, C. W. (1979). Education and training of probation officers: A critical assessment. *Fed. Probation*, 43, 41.
- Fredericksen, E., Swan, K., Pelz, W., Pickett, A., & Shea, P. (1999). Student satisfaction and perceived learning with online courses-principles and examples from the SUNY learning network. *Journal of Asynchronous Learning Networks*, (September 2000), 4 (2):7-41.
- Graham, C.R. (2006) Blended Learning Systems: Definition, Current Trends, and Future Directions. In: Bonk, C.J. and Graham, C.R., Eds., *Handbook of Blended Learning: Global Perspectives, Local Designs*, Pfeiffer Publishing, San Francisco, 3-21.
- Grayson, J. P. (2004). The Relationship Between Grades and Academic Program Satisfaction Over Four Years of Study. *Canadian Journal of Higher Education*, 34(2):1-34.
- Hanna, D. E., Glowacki-Dudka, M., & Runlee, S. (2000). *147 practical tips for teaching online groups*. Madison, WI: Atwood Publishing.
- Horn, H., Staker, H. (2015). *Blended: Using disruptive innovation to improve schools*. San Francisco: Jossey-Bass.
- Hussain, N., & Bhamani, S. (2012a). Development of the student university satisfaction scale: reliability and validity. *Interdisciplinary Journal of Contemporary Research in Business*, 4(3):332-341.
- Hussain, N., & Bhamani, S. (2012b). Investigating Academic Satisfaction of Students in Business Schools of Pakistan. *International Symposium on Education, Psychology and Social Sciences Conference Proceedings*. Kuala Lumpur 2012.(pp. 101-121)
- Karchevskiy, M. V. (2017). Positive experience of using technologies of distant education. *Scientific Herald of Sivershchtna / Series: Law* 2 (2): 142.
- Kizim, S. S. (2018). Peculiarities of would-be teachers'professional training with electronic educational resources. *Information Technologies and Learning Tools*, 65(3):115-132.

- Knight, C., & Stout, B. (2009). Probation and offender manager training: An argument for an integrated approach. *Probation Journal*, 56(3), 269-283.
- Krsmanovic, M., Djuric, M., & Dmitrovic, V. (2012). A Survey of Student Satisfaction with Distance Learning at Faculty of Organizational Sciences, University of Belgrade. In *International Conference on Virtual and Networked Organizations, Emergent Technologies, and Tools* 248, 111-117. Springer, Berlin, Heidelberg.
- Lambert, E. G., & Paoline, E. A. (2008). The influence of individual, job, and organizational characteristics on correctional staff job stress, job satisfaction, and organizational commitment. *Criminal Justice Review*, 33(4), 541-564.
- Lambert, E., & Paoline III, E. A. (2010). Take this job and shove it: An exploratory study of turnover intent among jail staff. *Journal of Criminal Justice*, 38(2), 139-148.
- Layman, C.E. (2015) Benefits of e-learning for Maryland parole and probation agents. [online] Available from: <http://www.academia.edu/>
- Leeds, C. M. (1951). Probation work requires special training. *Fed. Probation*, 15, 25.
- Leip, L. A., & Stinchcomb, J. B. (2013). Should I stay or should I go? Job satisfaction and turnover intent of jail staff throughout the United States. *Criminal Justice Review*, 38(2):226-241.
- Liashenko, I., & Hnapovska, L. (2019). Blended Education: Patterns of Implementation at Sumy State University. *Revista Romaneasca pentru Educatie Multidimensionala*, 11(3):141-162
- Lowenkamp, C. T., Holsinger, A. M., Flores, A. W., & Koutsenok, I. (2013). Changing probation officer attitudes: Training experience, motivation, and knowledge. *Fed. Probation*, 77, 54.
- Ma'arop, A. H., & Embi, M. A. (2016). Implementation of blended learning in higher learning institutions: A review of the literature. *International Education Studies*, 9(3): 41-52.
- Moore, M. G., & Kearsley, G. (1996). Distance education: A system view Belmont. *Wadsworth, CA*.
- Navarro, P. (2000). The **promise**—and **potential pitfalls**—of **cyberlearning**. In R. A. Cole (Ed.), **Issues in Web-based pedagogy: A critical primer** (pp. 281-296). Westport, CT: Greenwood Press.
- Oliynik, V. V., Samoylenko, O. M., Batsurovs'ka, I. V., & Dotsenko, N. A. (2018). Formation of future agricultural engineers professional

- competences in computer-oriented environment of higher education institutions. *Information Technologies and Learning Tools*, 68(6):140-154.
- Palmer, S. R., & Holt, D. M. (2009). Examining student satisfaction with wholly online learning. *Journal of computer assisted learning*, 25(2):101-113.
- Pekarchuk, V., Valieiev, R., & Zozulia, Y. (2018). Professional Motivation and Job Satisfaction of Personnel of State Penitentiary Service of Ukraine. *Hayka i osvima*, (3), 43-53.
- Pike, G. R. (1991). The effects of background, coursework, and involvement on students' grades and satisfaction. *Research in Higher Education*, 32(1), 15-30.
- Sharp, L. J. (1951). Inservice training in probation and parole. *Fed. Probation*, 15, 25.
- Skinner, C., & Goldhill, R. (2013). Changes in probation training in England and Wales: The Probation Qualification Framework (PQF) three years on. *European Journal of Probation*, 5(3): 41-55.
- Solinas, G., Masia, M. D., Maida, G., & Muresu, E. (2012). What really affects student satisfaction? An assessment of quality through a university-wide student survey. *Creative Education*, 3(1):37.
- Staker, H., & Horn, M. B. (2012). Classifying K-12 blended learning. *Innosight Institute*, 8-9, Available from: <http://www.innosightinstitute.org/innosight/wp-content/uploads/2012/05/Classifying-K-12-blended-learning2.pdf>
- Strachota, E. (2006, October). The use of survey research to measure student satisfaction in online courses. In *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*, University of Missouri-St. Louis, MO.
- Treadwell, J. (2006). Some personal reflections on probation training. *The Howard Journal of Criminal Justice*, 45(1): 1-13.
- Valieiev, R. (2013). *The Formation of Cognitive Autonomy of Cadets of the System of Ministry of Internal Affairs of Ukraine by means of information technology*. PhD dissertation. Ukraine: Luhansk Taras Shevchenko National University.
- Vernadakis, N., Giannousi, M., Tsitskari, E., Antoniou, P., & Kioumourtzoglou, S. (2012). Comparison of student satisfaction between traditional and blended technology course offerings in Physical education. *Turkish Online Journal of Distance Education*, 13(1):137-147.

- Wang, Y., Han, X., & Yang, J. (2015). Revisiting the blended learning literature: Using a complex adaptive systems framework. *Journal of Educational Technology & Society*, 18(2): 380-393.
- Hlynsky, Ya., Ryazhska, V. (2016). Development of the EEVR for the distance learning and distance education courses, on the 8th Scientific Conf. *Innovative computer technologies in higher education*, Lviv, 2016, p. 194-200.
- Zhao, Y., & Breslow, L. (2013). Literature review on hybrid/blended learning. *Teaching and Learning Laboratory*, Available from: https://tll.mit.edu/sites/default/files/library/Blended_Learning_Lit_Reveiw.pdf