Technology Enhanced Learning Integration: VBC Case Analysis

Gintaras Arbutavičius[1], Gitana Čechamirienė[1,2], Eglė Stankevičienė[1], Violeta Jadzgevičienė [2,3 a]
[1] Lithuanian University of Educational Sciences, Studentų 39, Vilnius, Lithuania
[2] Vilnius Business College, Kalvarijų 129, Vilnius, Lithuania
[3] Vilnius University, Faculty of Communication, Saulėtekio 9, Vilnius, Lithuania

Received 10 December 2016, accepted 30 December 2016

Abstract. The article describes the theoretical aspects of Technology Enhanced Learning (TEL) in organization and determines possibilities of TEL application in educational organizations. Research, based on seven sets of quality criteria, was designed to assess the readiness of TEL integration in educational organization, explores TEL situation in Vilnius Business College.

Citations: Gintaras Arbutavičius, Gitana Čechamirienė, Eglė Stankevičienė, Violeta Jadzgevičienė. Technology enhanced learning integration: VBC case analysis – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **2(21)** 2016 – Pp. 3-11.

Keywords: Technology Enhanced Learning; TEL; information and communications technology.
Short title: Technology enhanced learning.

Introduction

Various documents published by the European Commission emphasize the establishment of more open learning environment, more effective and qualitative educational service at European educational institutions. The European Commission promotes the use of new learning methods, development of digital skills; it also aims to increase the role of digital technologies in educational institutions etc. These policies are supported by scientists, who agree that technology enhanced learning develops teaching and education, provides new opportunities dealing with arising new learning needs, increases learning accessibility to all learners.

Internationally the emphasis is placed on higher education and business cooperation, looking for mutual benefit and integrity of science, research and innovation. This is especially emphasized by the European Union, the Organization for Economic Co-operation and Development (OECD) and the World Bank. Higher education institutions can contribute to business development and growth offering businesses the necessary studies [1].

People often use terms *virtual learning*, *distance learning*, *e-learning*, *collaborative learning*. But nowadays scientists use new term which defines all of the previous terms – *Technology Enhanced Learning* (TEL).

The research is based on a problem that even in science and education, as well as educational and business organizations technologies have been applied either by using standardized technology enhanced learning environments and systems, or with no regard to the organization's specific features. TEL is not implemented according to the needs of target groups; there is no assessment of the impact of the learning on the organization's innovation activity. Therefore, good practice experience cannot be directly transferred to new organizations due to the different contextual conditions. TEL integration depends significantly upon very rapid development of services and information communication technologies themselves.

On one hand, curriculum quality and availability, cost-effectiveness of new technologies, support systems, development of the Internet, the spread of open educational resources and increasing competition in the education and business promote the integration of TEL in the organizations.

On the other hand, temperance of employees when using new learning technologies, lack of investment into education from organizations, mismatch between university and labor market requirements, the lack of the Internet bandwidth and access prevent organizations from using these technologies.

The notion of technology enhanced learning is described in the theoretical part as well as possibilities to apply TEL in educational organizations.

The empiric research aims to determine obstacles that VBC lecturers and learners, who use technologies for learning purposes, endure. The research seeks to find out whether technology enhanced learning is well organized and whether it meets the criteria of TEL in organizations. It also suggests solutions to the problems that were pointed out, also to the problems that TEL did not solve. Apart from solutions it provides recommendations. The object of the research is technology enhanced learning.

The aim of the research – to determine the situation of technology enhanced learning organization at Vilnius Business College:

1) to describe the theoretical aspects of technology enhanced learning in organization;
2) to determine possibilities of technology enhanced learning application in educational organizations;
3) to explore technology enhanced learning situation in Vilnius Business College.

[a]Corresponding author, email: violeta.jadzg@gmail.com

1. Theoretical aspects of TEL in organization

Technology Enhanced Learning (TEL) is not a new concept. Mentioned term (TEL) is used to describe the application of information and communication technologies to teaching and learning. Term *Technology Enhanced Learning* is often used as a synonym for e-learning but can also be used to refer to technology enhanced classrooms and learning with technology, rather than just through technology.

According to Koller et al [2], during new technology development the concept of eLearning, distance learning terms expanded. In all definitions can be identified commonalities: all forms of learning takes place between two parts (a learner and a teacher), learning can be carried out at different times in different locations, using various forms of learning materials. Moreover, TEL uses methodologies that teachers and students can't be separated geographically and learning can be carried out with participants at the same place. In TEL methodologies mentioned that technology plays a secondary role and can be used to supplement traditional learning [2].

According to Kirkwood and Price [3], the term *Technology enhanced learning* is used to describe the usage of information and communication technology in teaching and learning, also to describe broad view to usage of technology in processes of teaching and learning. These authors state that a clear statement on how this concept is understood is rare and there is no evidence that a common understanding has been developed in higher education institutions in order to enhance students' learning experience [3].

Koller et al [2] propose the use of widespread definition, which TEL is learning using TEL content, electronic technology, the Internet, an intranet, satellite broadcasts, audio and video tapes, video and audio conferencing, web conferencing, chat rooms, e-mail. Bulletin boards, web casts, computer training and various memos. TEL aims to design, develop, test technological innovations that contribute to enhance learning opportunities to learners themselves, as well as organizations [4].

In this article estimating TEL definitions traits and characteristics TEL is understood as learning/ teaching form adapted to learning/ teaching at a distance, by electronic, virtual or other means by employing technologies in order to organize the learning/ teaching and to perform other learning/ teaching related actions on the internet. TEL is the broadest concept, which encompasses distance, virtual, electronic, mobile learning as well as learning through social networks [5].

Technology enhanced learning is one of lifelong learning means [6]. According to Koller et al [2], TEL changes teaching and education, offers new technological capabilities to deal with current learning needs. When highlighting this Lucas [6] argues that technology enhanced learning has the potential to transform education and raise the level of education all over the world. Learning by employing various technologies (ICT, the Internet, intranet, social networking, etc.) has become a global phenomenon [7]. According to Casanova et al. [8], ICT in education can be used in different contexts, for different purposes and forms. Use of technologies should be well planned, designed, considered and tested [8].

TEL is penetrating into education systems by replacing traditional (traditional learning is the way of learning in the classroom when the teacher gives a lecture on specified time and location) learning [9-10]. There is a new generation of learners with different work experience, particular education levels, various learning needs, which join the learning communities using social networking tools [11-12].

2. Possibilities of TEL application in educational organizations

Williams [13] learning culture and organizational learning infrastructure identifies as the key characteristics of a learning organization. Learning culture contributes to a constructive response to new information; adapting it on the basis of successful and unsuccessful experiences, and becoming a stronger, more effective. The learning culture encourages employee's strategic interest in new information and an alternative point of view, develop abilities to resolve conflicts successfully, that successfully developed planning can change according to the development factors. Learning has become a permanent strategic objective. Organizations must have learning support systems at several levels: through leadership, programs or projects. Especially important support comes from senior managers, who are responsible for learning and adaptation processes [13].

Schweizer [14] identifies a number of factors why TEL contributes to the effective education strategy:

i) TEL is well organized;
ii) different types of learning materials (texts, sounds, images, games, video conferencing, etc.);
iii) interactivity learning;
iv) the teacher becomes a facilitator.

Schweizer [14] states that teachers should be trained to provide training by TEL: become assistants for learners; communicate effectively, personalize the learning environment, lead discussions and administer training course.

TEL provides wide opportunities of social exclusion or reduction of the insulation on the Internet. According to Schweizer [14] for that can be used private sites of learners, team building tasks, learning activities for collaboration, interactive communication between teachers and learners, and learners themselves communication with each other through e-mail or other communication ways [14].

Beer et al. [15] argues that organizations should consider nine major aspects of TEL integration as presented below.

1. The identification of training needs and objectives.
2. Developed and adapted learning content.
3. The time factor combined with learning form.
4. TEL should be accepted positively by employees, they must be included in it.
5. TEL designed and combined with the traditional learning.
6. Interactivity.
7. Timely support from instructors or tutors.
8. An appropriate infrastructure.
9. The return on investment and cost evaluation.

According to Arnold [16], Aceto, Delrio and Dondi [17], Oliver [18], main advantages of TEL are learning independence of time and space, which makes it possible to have a

very flexible learning opportunities and learning more adapted to personal possibilities.

ICT is an essential factor in the modern education system. TEL integration in educational, business or other organizations cannot be imagined without appropriate infrastructure as presented in Ref. [15].

Raza and Allsop [19] describe TEL as an appropriate tool for skills development. In their view, the main TEL advantages: broader possibilities than traditional learning, cost-effectiveness, availability of learning for different types of learners, existing and expanding infrastructure to provide such learning. The authors believe that one of the factors of the spread of TEL - the potential of used technology. These technologies can overcome the shortcomings of existing education systems: quality and different access possibilities to learning systems [19].

Schweizer [14] in accordance with Russell [19-20] argues that TEL quality does not differ from traditional learning. In addition, that the TEL courses would be more efficient, while using high-quality learning opportunities, you need to understand what the important role in TEL environment plays a teacher [14], who, according to Cowan [22] must understand and apply the following strategies:

a) understand the technology, training programs and education reforms;
b) know appropriate use of a computer;
c) refer to researches;
d) create a detailed plan;
e) plan alternative assessment;
f) use already created learning resources (as an example, Open Educational Resources).

Koller, Harvey, Magnotta [2] distinguish five main TEL advantages compared to traditional learning:

i) availability, learning available anywhere, anytime;
ii) self-paced learning and alignment to the needs of the learner;
iii) accessibility for a large number of learners;
iv) timely updated information;
v) simplified and efficient providing of learning.

Kahiigi, Danielson, Hansson Ekenberg [23] emphasize that usage of technology in itself does not improve the quality of education, and for the successful development of TEL needed a good understanding of pedagogy and its interaction with technology [23]. These scientists do not support self-learning training and researches, because they believe students are only focused on how to successfully pass the tests and exams.

Bauer, Derntl, Motschnig-Pitrik and Tausch [24] argue that technology in the integration of TEL can enhance learning, only if teachers (preferably helpers, consultants) are "creative people" corresponded to certain interpersonal conditions. Learning atmosphere, explicit communication just depends on them.

According to Blanco et al [25], it is necessary to solve a number of didactic and organizational issues in order to increase the TEL experience in organizations as presented below.

1. **A safe learning environment.** Learners must have a safe environment where they are free to ask questions or contact the teacher and other learners.
2. **Easy learning / using environment.** Learners and education experts among the major challenges for learners mentioned mental fatigue and time pressure. According Govindasamy [26], Technology Enhanced Learning (TEL) should be created from smaller pieces, known as learning objects, short instructions.
3. **Thoughtfully designed learning.** This includes a flexible learning environment, which can use students with different learning styles. Different learning styles can be used to provide miscellaneous learning materials, such as text, video and audio information. Learners often lack information about their own learning process, so providing of different types of learning materials helps them to find out what type of information is the most effective for them.
4. **Feedback and counseling during all learning period.** Good teacher feedback in Technology Enhanced Learning (TEL) course helps learners develop meta-cognitive skills. Additional support for new learners is more effective than a completely self-directed learning. Support levels may be reduced so that the student's competency level rises. Timely established contact with the learner gives him the necessary support.
5. **The possibilities of self-evaluation.** The possibilities of self-evaluation develop the learners' meta-cognitive skills, which increases their independence and autonomy of learning. Regular self-examination leads to better learning outcomes. Self-assessment can be used at various stages of learning and may include computer-based testing, practical exercises and peer review.
6. **Collaborative learning.** Collaborative learning has a positive effect on learning motivation. Different forms of cooperation, such as synchronous (chat and video conferencing) and asynchronous (discussion groups, forums) and the promotion of small-group tasks allow learners to freely ask, answer, and otherwise contribute to the topic.
7. **Time management.** Time management has a positive contribution to the time control, job satisfaction and health. The specific objectives of the course emphasizes the important issues, assess the time required for submission of assignments, course calendar helps to increase learning time control. In Technology Enhanced Learning (TEL) environment students need to manage their own learning pace and tasks. Adults tend to have better-developed time management skills than their younger counterparts [27], but the lack of time is still common problem for adult learners.
8. **Motivation.** For maintenance of motivation various or all previously mentioned methods (creating a sense of community, learning effort recognition of real research examples of cases presentation etc) are employed.

Technology Enhanced Learning (TEL) seeks to improve the student learning experience by following options:

a) aiding student engagement, satisfaction and retention;

b) helping to produce enterprising graduates with the skills required to compete in the global business environment;
c) encouraging inspirational and innovative teaching;
d) personalizing learning that promotes reflection;
e) delivering and supporting CPD and internationalization.

3. Research Methodology

We used a mixed research methodology: quantitative (questionnaire) and qualitative (case study) researches. This research is based on seven sets of quality criteria, designed to assess the readiness of TEL integration in educational organization by A.Volungevičienė et al [28]. All questions of qualitative and of quantitative studies were divided into seven criteria groups.

1. Strategy and management.
2. ICT and infrastructure.
3. TEL content (curriculum).
4. Continuing professional development.
5. TEL support system.
6. Quality assurance.
7. Marketing and entrepreneurship.

The goal of the researches is to determine possibilities of application of TEL in Vilnius Business College. Having distinguished the key variables, a quantitative questionnaire was designed and placed on the VBC Intranet. The link was sent to all VBC students. 197 students answered our questionnaire. The data was collected in the period of September – October 2016.

Internal consistency. Internal consistency was estimated by calculating Cronbach α value. The total α=0,919 – which show a very high internal consistency indicator appropriate for the analysis. To check the additional consistency of the questionnaire, a method of split-half was employed: for part one α=0,905, of part two α=0,811. Mutual correlation of parts equals to 0,730. Guttman split-half coefficient equals to 0,843 (good consistency is indicated by value higher than 0,8).

Respondents. The youngest respondent is 18 years old. The oldest is 51 years old. The average age was 23,42 (standard deviation 4,98). Most of the research participants had secondary education - 165 (83,8%), higher – 20 (10,2%) and vocational – 12 (6,1%). Distribution according to sex contains 129 (65,5%) males and 68 (34,5%) females.

4. Results of empirical researches

4.1. Strategy and management criteria group

Many world-famous universities (Edinburgh, West of England, Bristol, etc.) have developed their own technology enhanced learning strategies that are freely available online. In the strategies presented TEL development plans, discussed the current and future opportunities TEL, strategic plans, etc.

The research indicated that not all statements identifying the strategy are valued equally by the respondents. The responses show that VBC is learning organization with the learning objectives (70,5%) and College management is responsive to student's initiatives (68,6%) – about 70% of the respondents agree to these criteria (see Fig. 1).

However, the highest numbers of the respondents do not know about VBC strategy (70,6%). Also the respondents have difficulty in recognizing that College teachers apply various technologies (41,6%).

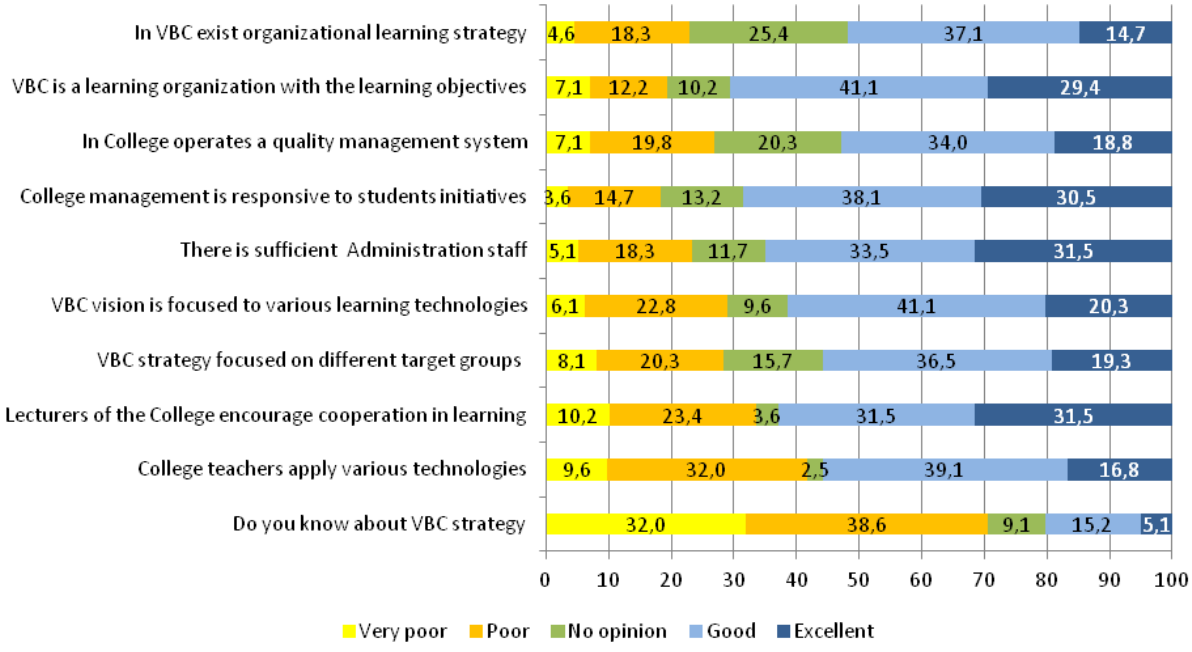

Fig. 1. Expression of each criterion within Strategy and management criteria group.

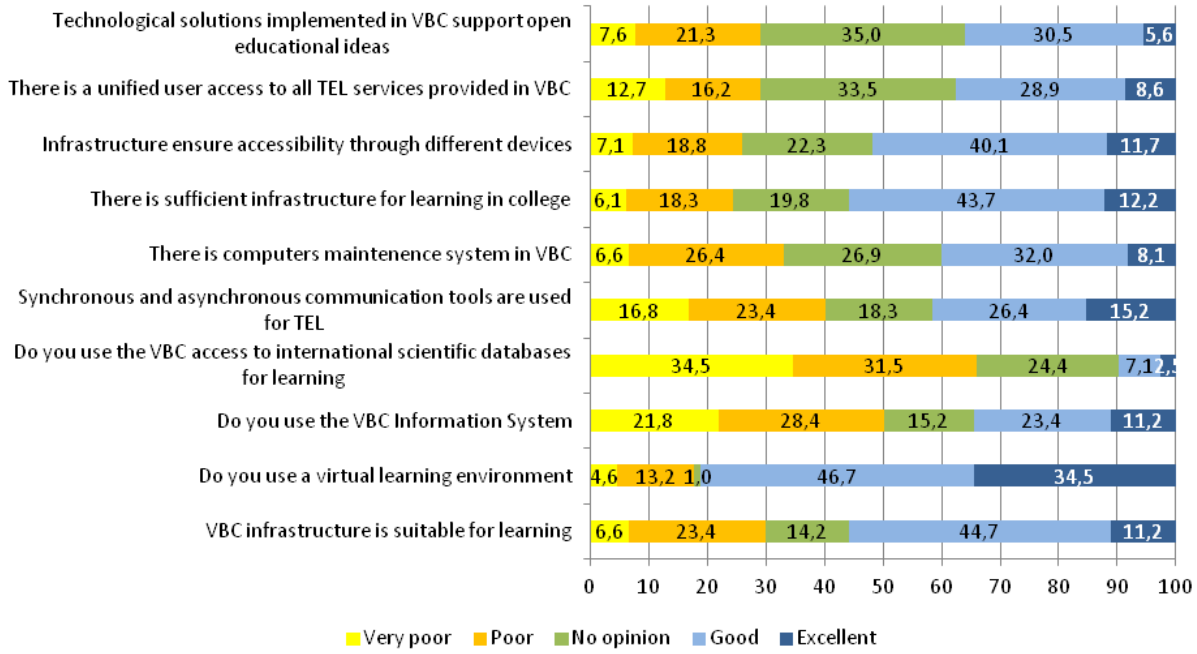

Fig. 2. Expression of each criterion within ICT and infrastructure criteria group.

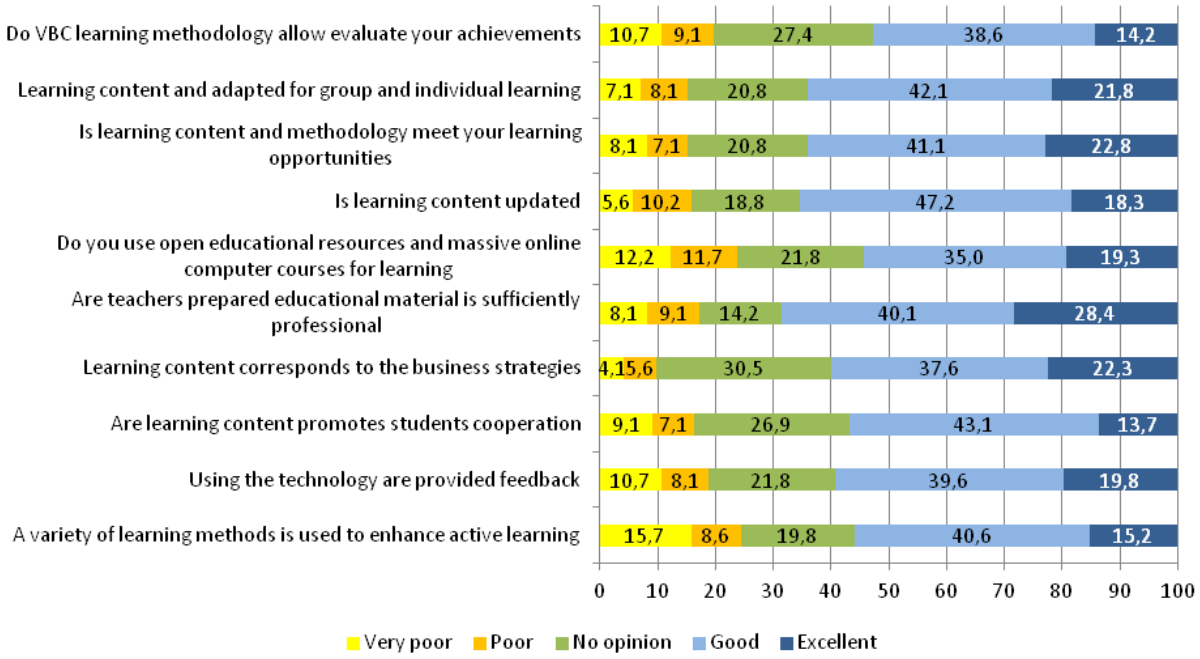

Fig. 3. Expression of each criterion within TEL content (curriculum) criteria group.

4.2. ICT and infrastructure criteria group

In this criteria group we also have differently valued statements (Fig. 2). 81,2% respondents state that they use virtual learning environment. More than 50% of the respondents agree to the statements that VBC infrastructure is suitable for learning (55,8%), there is sufficient infrastructure for learning in college (55,8%) and that infrastructure ensures accessibility through different devices (51,8%). However, 66% of the respondents do not use the VBC access to international scientific databases for learning and 50,3% do not use the VBC Information System.

4.3. TEL content (curriculum) criteria group

In TEL content (curriculum) criteria group all positive estimates are more than 50% (Fig. 3). Even 68,5% of the respondents state that teachers prepared educational material is sufficiently professional and 65, 5 agree that learning content is updated constantly.

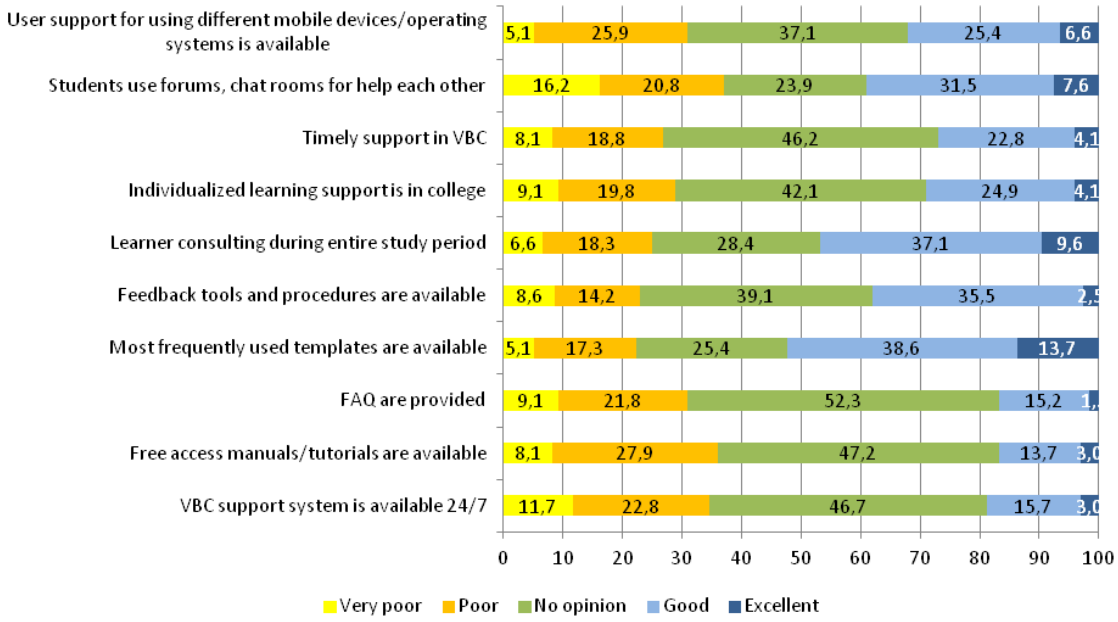

Fig. 4. Expression of each criterion within TEL support system criteria group.

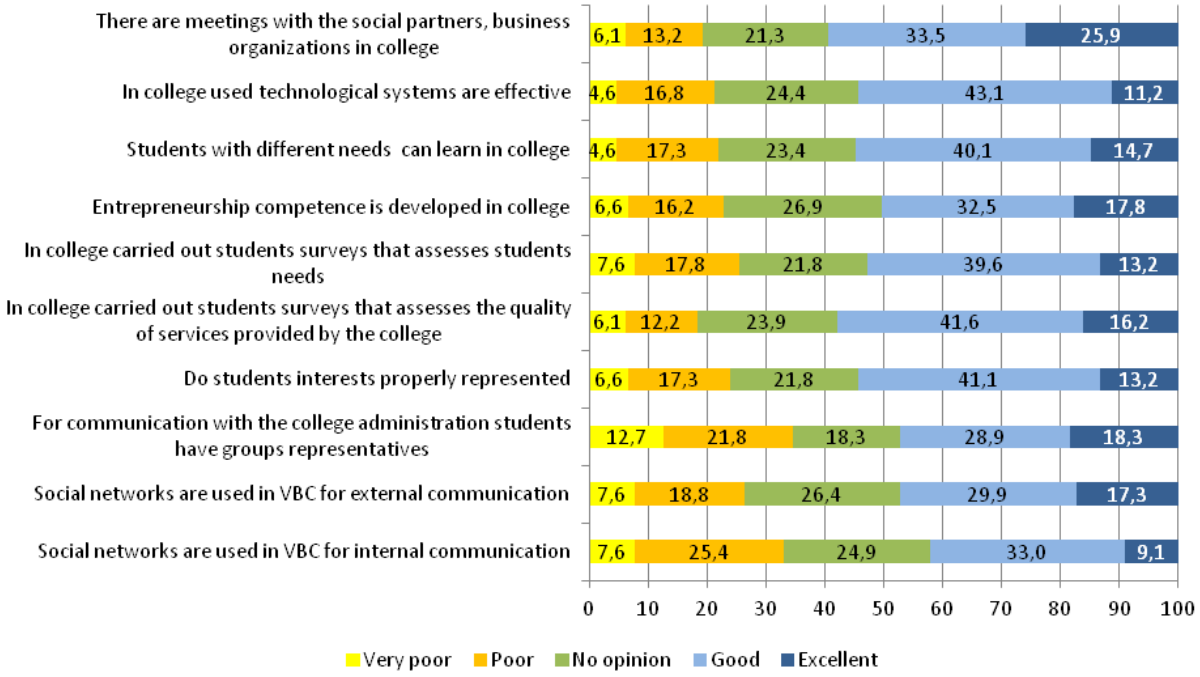

Fig. 5. Expression of each criterion within Marketing and entrepreneurship criteria group.

4.3. TEL support system criteria group

In TEL support system criteria group, mainly students did not know how to answer the questions and selected answer *No opinion* (see Fig. 4). Only one statement is rated more than 50%. Most frequently used templates are available (52,3%). The respondents have difficulty in recognizing that use forums, chat rooms for help each other (37,1%) and that free access manuals or tutorials are available (36%).

59,4% of the respondents state that there are meetings with the social partners, business organizations in college and 57,9% state that in college carried out students' surveys that assesses the quality of services provided by the college. But 34,5% do not agree that students have groups representatives for communication with the college administration and 33% of the respondents do not agree that social networks are used in VBC for internal communication.

Table 1. Short summary of the research.

N	Option	N	Option
1.	Vision of organization encourages TEL implementation.	16.	Learning content is adapted for group (individual) learning.
2.	TEL policy is focused on the learners.	17.	There are requirements for teachers (for all staff).
3.	Promotion of organizational learning; cooperative learning.	18.	OER accessibility.
4.	TEL strategy focused on different target groups and stakeholders.	19.	Planning of staff training.
5.	Top-level executives reacting to the initiatives raised by employees and students.	20.	Institutional recognition of learning outcomes.
6.	Use of TEL environment.	21.	Learners consulting during entire study period.
7.	Investment in ICT and infrastructure are planned.	22.	Individualized support system.
8.	Protection of IT system (resources).	23.	Support for many operating systems, different devices users.
9.	There is ICT support staff.	24.	Assessment of TEL content quality.
10.	Infrastructure ensures learning accesses, using different equipment.	25.	Internal and external evaluation of TEL content in organizations.
11.	The constructivist approach to learning.	26.	Quality assurance procedures of TEL content.
12.	Usage of social networking for learning.	27.	Quality management system.
13.	Different learning content.	28.	Participation in social networking.
14.	Usage of Open educational resources.	29.	Assessment of the effectiveness of communication.
15.	Learning content and workload is based on the ECTS / or competencies.	30.	The organization's marketing strategy, marketing plans.

5. Qualitative research

Case study was employed to analyze TEL peculiarities of Vilnius Business College. VBC was founded in 1989 as one of the first non-governmental higher education institutions. In 2001 it was granted the status of non-university / college higher education institution and the right to provide students with the higher education diploma. Since 2007 Vilnius Business College is a higher education accredited school that provides occupational Bachelor's degree in the fields of humanities, social and physical sciences.

Data for the case study was collected in several ways:

a) semi-structured interviews with the College Director, Deputy Director and 3 heads of departments;
b) examination of organization documents (statutes, management programmes and monitoring plan and records, programs of management system objectives implementation, the management manual).

The case study was carried out from October to November in 2016. The research was carried out within 3 days in the premises of VBC. The average recording time was about one and a half hour.

This case study is significant because it allowed to perform a detailed examination of peculiarities of technology enhanced learning integration in VBC. Here we can present only short basics findings - see Table 1.

Conclusions and recommendations

To achieve TEL integration in organizations successfully, it is vital to combine relevant learning content, suitable learning ways, collaboration of employees, lecturers and students, and estimation of learning process results.

TEL provides great opportunities for learners: to choose the place to study, the perfect timing and way to gain knowledge quickly, it also allows using various learning materials, reducing social disjuncture or isolation on the internet.

Advantages of TEL could be formulated as follow:

i) individualization of learning;
ii) greater opportunities compared with traditional learning;
iii) cost efficiency;
iv) accessibility to learning material for various types of learners;
v) simplified and efficient provision of learning.

For the successful integration of TEL in educational organization it is necessary to create a safe, easy-to-use learning environment, to design carefully the learning process, to ensure a feedback and consulting during the learning period as well as self-assessment possibilities, to use the collaborative learning and to enhance the learning motivation. Furthermore, during the period of integration it is essential to pay attention to the problems of TEL determined by some scientists and the ways to solve those problems as follows: a) problem due to a big amount of early school leavers; b) integration of TEL regardless of plans and strategies; c) needs for staff and heads; d) absence of investments into education; e) lack of appropriate material and software as well as computer literacy; f) inappropriate ICT infrastructure.

During the period of TEL integration an educational organization should follow some recommendations.

1. It should be analyzed TEL criteria and planned implementation.
2. It should be evaluated the application of TEL integration criteria in each criteria group. Accordingly, the organization should review the strategic documents, the

requirements of ICT infrastructure, staff professional development, learning content, support system, quality assurance and marketing.
3. Executives of organization should prepare the detailed integration guidelines for TEL integration criteria in the organization.
4. If an organization uses TEL, it is recommended to appoint a responsible person who would investigate if the TEL integration criteria are being observed and would plan the ways to eliminate the determined drawbacks.

References

1. OECD. Giving knowledge for free: The Emergence of Open Educational Resources. Organisation for Economic Co-operation and Development (OECD). – France, Paris, 2007. – Internet access: <http://www.oecd.org/edu/ceri/38654317.pdf>, accessed 2016.10.04.
2. Koller V., Harvey S., Magnotta M. Technology-Based Learning Strategies. – Oakland: Social Policy Research Associates, 2010.
3. Kirkwood A., Price L. Technology-enhanced learning and teaching in higher education: what is 'enhanced' and how do we know? A critical literature review. – *Learning, Media and Technology* 39(1) (2014) 6-36.
4. Manouselis N., Drachsler H., Vuorikari R., Hummel H., Koper R. Recommender systems in technology enhanced learning. Recommender Systems Handbook. – Springer, 2011. – 387-415.
5. Teresevičienė M., Volungevičienė A., Žydžiūnaitė V., Kaminskienė L., Rutkienė A., Trepulė E., Daukilas S. Technologijomis grindžiamas mokymas ir mokymasis organizacijoje. – Vytauto Didžiojo universitetas: Versus Aureus, 2015.
6. Lucas H. C. Can the Current Model of Higher Education Survive MOOCs and Online Learning? – *EDUCAUSE Review* 48(5) (2013) 54-56.
7. Gulati S. Technology-Enhanced Learning in Developing Nations: A review. – *International Review of Research in Open and Distance Learning* 9(1) (2008).
8. Casanova D., Moreira A., Costa N. Technology Enhanced Learning in Higher Education: results from the design of a quality evaluation framework. – *Procedia-Social and Behavioral Sciences* 29 (2011) 893-902.
9. Zhang D., Zhao J. L., Zhou L., Nunamaker Jr J. F. Can e-learning replace classroom learning? – *Communications of the ACM* 47(5) (2004) 75-79.
10. Delgado-Kloos C., Wild F. Monograph: Technology-Enhanced Learning. – *European Journal for the Informatics Professional* IX(3) (2008).
11. Keppell M., Au E., Ma A., Chan C. Peer learning and learning-oriented assessment in technology-enhanced environments. – *Assessment & Evaluation in Higher Education* 31(4) (2006) 453–464.
12. Mulwa C., Lawless S., Sharp M., Arnedillo-Sanchez I., Wade V. Adaptive educational hypermedia systems in technology enhanced learning: a literature review. – In: Proceedings of the 2010 ACM conference on Information technology education, 2010. – 73-84.
13. Williams A. Evaluation for Strategic Learning: Assessing Readiness and Results. – Center for Evaluation Innovation, 2014.
14. Schweizer H. E-Learning in Business. – *Journal of Management Education* 28(6) (2004).
15. Beer D., Busse Th., Hamburg I., Oehler C., eds. Improving E-Learning Practices in SME. – Proceedings of the SIMPEL Final Conference in Brussels. – Universitas Györ, 2008.
16. Arnold R. Blended learning in international human resource development. On the characteristic features and the comparative didactic advantages of faceto-face learning, distance learning and e-learning. – Bd. 22 der Schriftenreihe „Pädagogische Materialien der Technischen Universität Kaiserslautern". – Kaiserslautern, 2004.
17. Aceto S., Delrio C., Dondi C. E-Learning for Innovation. – Executive Summary of Helios Yearly Report, 2007.
18. Oliver R. Quality assurance and e-learning: Blue skies and pragmatism. ALT-J. – *Research in Learning Technology* 13(3) (2005) 173-187.
19. Raza R., Allsop T. Using distance education for skills development. – Department for International Development, 2006.
20. Russell T. L. The no significant difference phenomenon. – Chapel Hill: North Carolina State University, Office of Instructional Telecommunications, 1999.
21. Russell T. L. No significant difference, 2000. – Available at <http://cuda.teleeducation.nb.ca/ nosignificantdifference/>, accessed 2016.08.29.
22. Cowan J. E. Strategies for planning technology-enhanced learning experiences. – *The Clearing House: A Journal of Educational Strategies, Issues and Ideas* 82(2) (2008) 55-59.
23. Kahiigi K. E., Ekenberg L., Hansson H., Tusubira F. F., Danielson M. – *Exploring the e-learning state of art. The Electronic Journal of e-Learning* 6(2) (2008) 77-88.
24. Bauer C., Derntl M., Motschnig-Pitrik R., Tausch R. Promotive activities in face-to-face and technology-enhanced learning environments. – *The Person-Centered Journal* 13(1-2) (2006) 12-37.
25. Blanco M. M., Van der Veer G., Benvenuti L., Kirschner P.A. Design guidelines for self-assessment support for adult academic distance learning, 2011. – <http://www.academia.edu/2722249/Design_guidelines_for_self-assessment_support_for_adult_academic_distance_learning>, accessed 2013-11-05.
26. Govindasamy T. Successful Implementation of e-Learning Pedagogical Considerations. – *Pergamon: Internet and Higher Education* 4 (2002) 287–299.

27. Trueman M., Hartley J. A comparison between the time-management skills and academic performance of mature and traditional-entry university students. – *Higher education* 32(2) (1996) 199-215.
28. Volungevičienė A., Teresevičienė M., Tait A. W. Framework of quality assurance of TEL integration into an educational organization. – *The International Review of Research in Open and Distributed Learning* 15(6) (2014).