

# PERSPECTIVES ON DEVELOPING E-LEARNING AT THE STATE BORDER GUARD COLLEGE OF THE REPUBLIC OF LATVIA

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**Abstract.** *The authors of this article describe the development process of e-learning system at the State Border Guard College, depict theoretical and practical concepts, peculiarities of e-course's development. Suggestions and proposals on e-course development and improvement based on the experience gained during e-learning course development and administration supported by survey results are given in the conclusion of this article in order to facilitate the improvement of e-learning systems in other law enforcement agencies.*

**Keywords:** *Development of e-learning, e-course design, interaction, peculiarities, perspectives.*

## Introduction

Implementation of E-learning in the State Border Guard College (hereinafter – the College) has been one of the priorities over the last decade. The variations of using e-environment and the phenomenon of introducing e-learning as an innovative approach to border guards' learning has developed very rapidly, hence it is important to analyze and share the best practices of e-learning approaches and models currently implemented at the College. In order to find research based suggestions in the ways of improving e-learning system for border guards the authors of this report have analyzed several scientific researches, inquired border guards from Latvia to receive feedback which would facilitate the development of e-learning system in the future.

Research period: 2008 – 2016

Aim and tasks of the paper: To analyze the e-learning process at the College and provide suggestions for improvement of the e-learning system in future perspective based on research findings.

Research methods: Meta-analysis, experimental and descriptive-quantitative methods have been used during research period.

Hypothesis: Development and implementation of well-structured and goal oriented e-learning courses for border guards require in-depth understanding on e-course design and implementation, hence more efforts from trainer's perspective are needed in comparison to traditional studies.

Taking into account the experience accumulated over time both in system development, administration and implementation of e-courses, the authors of this report shall reflect on theoretical and practical aspects of e-learning as well as share the best practices and suggestions on the ways to improve e-learning system for law enforcement agencies.

### **The development of e-learning system at the State Border Guard College and guidelines in e-course development**

In order to promote access and facilitate the learning process in College since 2008, for training purposes Distance Education Information System (in Latvian - TIS) of border guards is used. All information is available on a course management system MOODLE (Modular Object-Oriented Dynamic Learning Environment) which is intended for management and implementation of e-learning courses (About Moodle, [https://docs.moodle.org/30/en/About\\_Moodle](https://docs.moodle.org/30/en/About_Moodle)). Moodle system of the College includes electronic text documents, presentations, video, audio materials and electronic tests in order to facilitate the learning process. When the platform was developed learners had the opportunity to use resources only from the intranet and there was no opportunity for access from public networks. Since the beginning of 2015, the system is also available on public networks, such option was achieved by purchasing new server specially intended for the development of e-learning. In addition new computers were installed and better WI-FI coverage was provided hence learners of the College could fully take advantage of e-environment (Mārtiņš Spridzāns, Jans Pavlovičs, 2015, page 203).

In the beginning of 2014 a concept of e-learning was approved in the College and teachers were acquainted with Moodle system and the development of e-courses. Prior development of courses all teachers were introduced to e-environment peculiarities both in theory and in practice on the best practice in structuring the information and test development. The authors agree with the findings of Tor Atle Hjeltnes and Borje Hansson from Mod Sweden University in their report "Cost effectiveness and cost efficiency in e-learning" within the EU project "Quality, Interoperability and standards in e-learning" that teachers have little knowledge about how students learn and therefore there is no sound strategy for how to create good courses. Swedish researchers emphasize the fact that susceptible teachers use trial and error hope they will get it right sooner or later. The same non-pedagogy is used when they are supposed to transfer classroom courses into e-learning courses. This is often an even bigger challenge if they have little experience with new e-learning environments themselves (Tor Atle Hjeltnes and Borje Hansson, 2005, page 22).

The authors agree that most of the teachers of the College (about 80%) based on research results have no clear understanding on e-learning peculiarities. To help teachers of the College in development of e-learning courses the authors of this paper suggest to use research based findings in the guide for designing and developing e-learning courses by Beatrice Ghirardini, Instructional Designer, FAO, developed in 2011. The purpose of this guide is to provide detailed guidance on designing and developing an e-learning course for trainers and instructional designers who are new to e-learning design. In introduction of the guide it is mentioned that developing e-learning is more expensive than preparing classroom materials and training the trainers, especially if multimedia or highly interactive methods are used. However, delivery costs for e-learning (including costs of web servers and technical support) are considerably lower than those for classroom facilities, instructor time, participants' travel and job time lost to attend classroom sessions. (Beatrice Ghirardini, 2011, page 10).

Beatrice Ghirardini concludes that E-learning is a good option when

- ✓ there is a significant amount of content to be delivered to a large number of learners and learners come from geographically dispersed locations;
- ✓ learners have limited mobility and limited daily time to devote to learning;
- ✓ learners do not have effective listening and reading skills;
- ✓ learners have at least basic computer and Internet skills;
- ✓ learners are required to develop homogeneous background knowledge on the topic;
- ✓ learners are highly motivated to learn and appreciate proceeding at their own pace;
- ✓ training aims to build cognitive skills rather than psychomotor skills;
- ✓ the course addresses long-term rather than short-term training needs;
- ✓ there is a need to collect and track data. (Beatrice Ghirardini, 2011, page 12)

The findings of Beatrice Ghirardini emphasize that good design and planning are crucial parts for every type of training programme, are even more important for e-learning projects. In traditional training, the largest effort is in the delivery of training sessions, while in e-learning, it is in the design and development of structured materials which must be self-contained and able to be used multiple times without making ongoing adjustments.

According to the guide for designing and developing e-learning courses by Beatrice Ghirardini there are five stages in the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) process of that model are described below:

1. **Analysis** - needs analysis should be conducted at the start of any development effort to determine whether training is required to fill a gap in professional knowledge and skills and e-learning is the best solution to deliver the training. Target audience analysis is another crucial step. The design and delivery of e-learning will be influenced by key characteristics of the learners (e.g. their previous knowledge and skills, geographical provenience, learning context and access to technology). Analysis also is needed to determine the course content. Task analysis identifies the job tasks that learners should learn or improve and the knowledge and skills that need to be developed or reinforced. This type of analysis is mainly used in courses designed to build specific job-related skills. Topic analysis is carried out to identify and classify the course content. This is typical of those courses that are primarily designed to provide information.
2. **Design** - the design stage encompasses the following activities:
  - 2.1. Formulating a set of learning objectives required to achieve the general, high-level course objective;
  - 2.2. Defining the order in which the objectives should be achieved (sequencing);
  - 2.3. Selecting instructional, media, evaluation and delivery strategies.

The outcome of the design stage is a blueprint that will be used as a reference to develop the course. The blueprint illustrates the curriculum structure (e.g. its organization in courses, units, lessons, activities); the learning objectives associated with each unit; and the delivery methods and formats (e.g. interactive self-paced materials, synchronous and/or asynchronous collaborative activities) to deliver each unit.

3. **Development** - in this stage, the e-learning content is actually produced. The content can vary considerably, depending on the available resources. For example, e-learning content may consist of only simpler materials (i.e. those with little or no interactivity or multimedia, such as structured PDF documents) which can be combined with other materials (e.g. audio or video files), assignments and tests.

The development of multimedia interactive content is comprised of three main steps:

- 3.1. Content development: writing or collecting all the required knowledge and information;
- 3.2. Storyboard development: integrating instructional methods (all the pedagogical elements needed to support the learning process) and media elements. This is done by developing the storyboard, a document that describes all the components of the final interactive products, including images, text, interactions and assessment tests;
- 3.3. Courseware development: developing media and interactive components, producing the course in different formats for CD-ROM and Web delivery and integrating the content elements into a learning platform that learners can access.
4. **Implementation** - at this stage the course is delivered to learners. The courseware is installed on a server and made accessible for learners. In facilitated and instructor-led courses, this stage also includes managing and facilitating learners' activities.
5. **Evaluation** - an e-learning project can be evaluated for specific evaluation purposes. You may want to evaluate learners' reactions, the achievement of learning objectives, the transfer of job-related knowledge and skills, and the impact of the project on the organization.

(Beatrice Ghirardini, 2011, page 21, 22)

The authors of this paper have developed e-learning courses themselves and have come to conclusion that building efficient e-learning course is a very time consuming process. The teacher must have good knowledge in test building, hence the authors suggest to use the analysis of test building from the guide for designing and developing e-learning courses by Beatrice Ghirardini, see below:

**Table 1. Advantages and disadvantages of tests in e-learning** (Beatrice Ghirardini, 2011, page 87)

Type of question	Advantages	Disadvantages
<b>True or False</b>	Easy to create Can differentiate feedback for each option.	Learners have a 50 percent chance of selecting the right option. The answer is not created by the learner.
<b>Multiple choice</b>	Very flexible (can be used for several purposes) Can differentiate feedback for each option.	Difficult to create (you have to develop credible wrong options and write different feedback for each of them). The answer is not created by the learner.
<b>Multiple</b>	Very flexible (can be used	Quite difficult to create (you have to

<b>responses</b>	for several purposes).	develop credible wrong options) The answer is not created by the learner.
<b>Matching</b>	Quite easy to create.	Risk of being too easy for learners. The answer is not created by the learner
<b>Ordering</b>	Quite easy to create.	The answer is not created by the learner.
<b>Fill-in the blanks</b>	Easy to create.	Rarely appropriate Difficult to measure.
<b>Short answer/short essay</b>	The answer is created by the learner.	Very difficult to measure.

When building tests in Moodle system the authors suggest as a preferable approach in course design would be teachers' interaction with IT specialists who might present and explain the capabilities of Moodle system, especially in test building variations. Despite the fact that test building in Moodle for specific types of tests is rather complicated it is advisable to be done by the teacher who has both the clear vision of pedagogical outcomes and IT perspectives rather than IT specialist who has no clear understanding what would be the possible outcome and the test being developed and how it might influence the learning process. In addition experience shows that when e-course is implemented usually after feedback (students of the College have to fill in questionnaires after each qualification course) students note which tests or questions must be improved or amended as appropriate, in this case it would be better that the teacher himself/herself would analyze the feedback and would have skills to amend and improve the test or specific question.

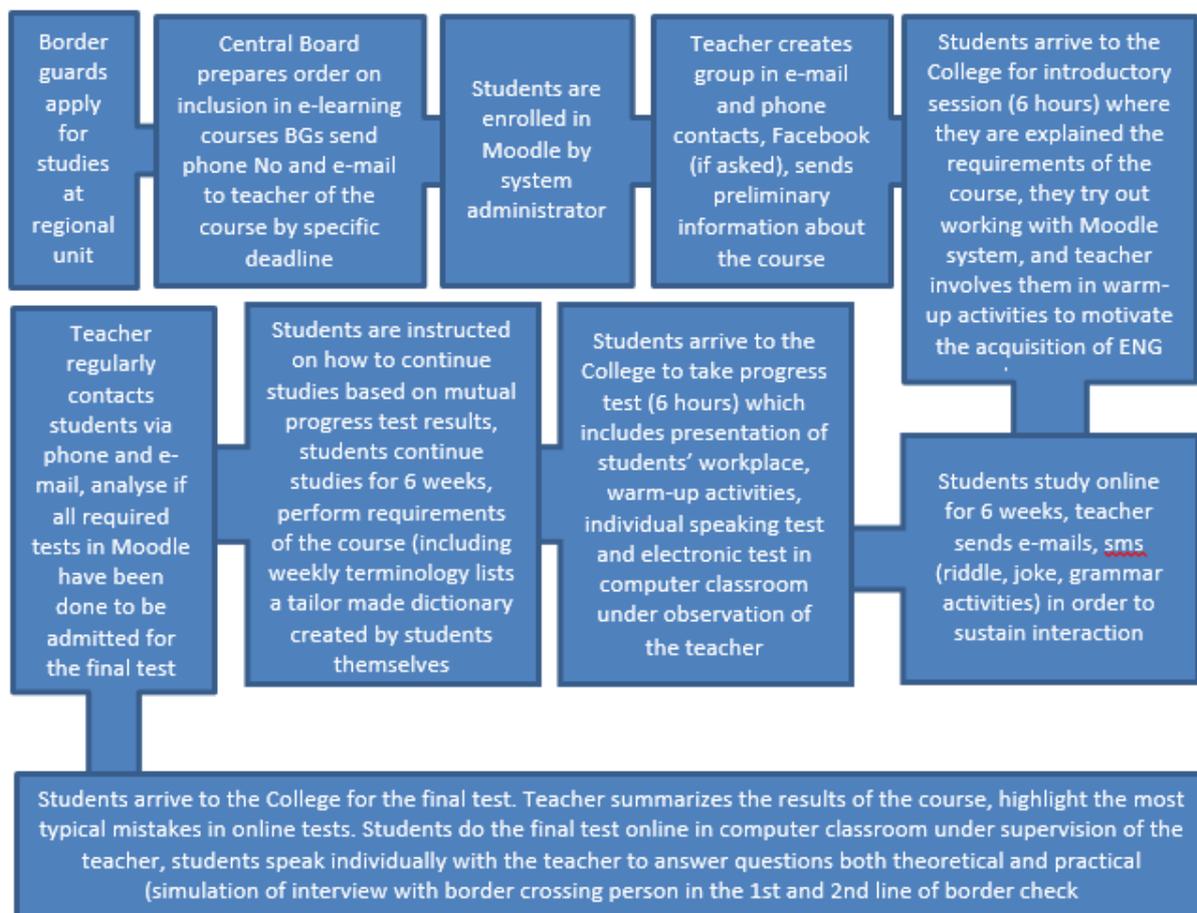
Currently all materials which are transferred to Moodle are initially accepted as valid by the council of specific teachers of the College, however the authors agree that more added value on test validity is received after students' feedback from several courses, it is ongoing process since after each of e-courses implemented there is always some areas to be improved within the e-course. Currently the following courses have been developed in the Moodle platform of the College:

1. Specialized English language terminology (13 weeks)
2. Administrative documentation (5 weeks)
3. Radiometric control (4 weeks)
4. Personnel management (3 weeks)

The concept of e-learning system foresees gradual transformation of specific qualification courses in e-environment. For this purpose teachers of the College will have to analyze whether the courses they are running in

traditional classroom might be transferred in e-environment. The key issues in this field concern gradual decrease of teachers' workload, the balance between theory and practical studies e.g. several courses are rather difficult to be adapted to e-learning, additionally the issue of confidentiality of the information opened for public has to be carefully analyzed.

Since Specialized English language terminology e-course has been successfully implemented since 2011 and other e-courses have been implemented for a short period of time the authors would like to share the model of e-learning as best practice accumulated over years which could be taken as a sample for the development of similar e-courses. It must be noted that the current model has been introduced on the basis of ongoing feedback analysis where the graduates of e-course had the opportunity to summarize their opinion and provide suggestions on improving the e-course.



**Fig.1. Specialized English language terminology e-course model implemented at the College** (source: compiled by the author)

Feedback surveys of the above mentioned e-course showed that students are accustomed to the traditional training and emphasized the lack traditional face to face interaction with the teacher. Scientists also stress

that the foreign language learning in the context of the e - environment is very suitable for the vocabulary and theoretical knowledge acquisition, while listening and speaking skills are rather unsuitable without any direct contact with the teacher. (Laura Alonso Díaz and Florentino Blázquez Entonado, 2009, page 339).

In order to overcome the lack of face to face interaction in English e-course more time has been invested in telephone conversations, however the authors admit it is rather complicated approach since border guards have to work day and night shifts and eventually it is rather complicated to plan telephone conversations. Currently in English e-courses it is required to have a telephone conversation at least once in two weeks. Having less workload for running traditional classes the percentage of telephone conversations should be increased to compensate the lack of face to face interaction.

### **Results of the survey for border guards and teachers who have participated in e-courses at the College**

In order to receive feedback and analyse possible areas to be improved in the future concerning e-learning at the College the authors have performed the survey both for learners of e-courses as well as for teachers of the College. Since English e-learning course has been implemented in the College for several years, the authors have inquired graduates' attitude to e-learning in general but not only targeted to language acquisition as such. The results of the survey indicate key facts worth to be considered and taken into account when developing and implementing e-courses both from teachers and administration perspective.

In total 92 border guards were inquired via electronic questionnaire. The responses show that 95.3% border guards agree that they have improved their qualification in e-learning courses implemented at the College, however 48.8% agree that they would rather prefer traditional learning in comparison to e-learning mode. In total 78% respondents stated as the biggest advantage of e-learning to be the option when they can study at their own pace, as the biggest disadvantage is mentioned the lack of face to face interaction 67.1% of border guards. One of the crucial aspects in successful completion of an e-course is learners' motivation. When responding to the question on their motivation to study and what would enhance their motivation 48.9 % of border guards indicated the fact that administration of the State Border Guard should foresee particular motivators e.g. rewards for successful participation in e-courses e.g. a day off etc. to compensate their private time (apart from fixed working hours)

invested in studies. Obviously results of questionnaire show only positive attitude towards e-learning as such except the answer to question what qualification course would be more credible to you traditional or e-learning as an employer the 87.5% of border guards were in favour of traditional studies, hence highlighting a stereotypical disbelief in efficiency of such type of learning. When answering the question on the possible models of e-learning 77.8% respondents mentioned the need for face to face interaction as integral part in every e-course to be implemented.

The second questionnaire was provided to teachers of the College all together 16 teachers were inquired to provide feedback on e-learning. Biggest part of teachers confirm that e-learning is a useful way to improve qualification raising system (60%) however 80% of them mention that they lack in-depth knowledge in e-learning course development. About 53.3% interpret the development of e-learning course as a burden that would require a lot of time while the course is being developed on the contrary 46.7% interpret e-learning as a challenge that might be worthwhile in the future. To the question what kind of support is required from administration of the College 46.7% of the teachers responded that they would need more time allocated directly to the development of e-courses.

### **Conclusions and suggestions**

Based on research results and experience gained during implementation of e-courses at the College the authors have come to the following conclusions and suggestions.

1. Teachers and students are still used to traditional classes. To develop a goal oriented e-course teachers must have an in-depth understanding of e-environment both from IT and pedagogical perspective;
2. When developing and running an e-course teachers should use ADDIE model (Analysis, Design, Development, Implementation, Evaluation) as described in page 3-5 of this report as well as the model of e-courses at the College described in Table 2;
3. Before implementation of e-learning potential users must have basic information about the e-learning system (requirements of the course, registration and using of Moodle system). For this purpose it is advisable to develop either a brochure on e-learning requirements for specific course or to have an induction session where the teacher explains the system and expectations e-learning.

4. When developing e-learning course it is important to structure content the information in the way it is easy to navigate, find answers, receive instant feedback e.g. knowledge check exercises (self –study principle);
5. To compensate the lack of face to face interaction with the teacher as typical to traditional classes there must be compensatory measures introduced during e- course (wherever possible e-mail, sms, video or telephone conversations etc.), in addition teachers work load must be adapted to the needs of e-course e.g. to compensate the work invested e.g. during weekends (usually border guards have shift work and teachers are involved in interaction post their working time).
6. It is crucial to analyse progress and feedback after each e-course i.e. teachers must investigate feedback from graduates, to inquire positive and negative aspects and eventually improve the e-course for future users.
7. Border guards' training institutions might develop joint e-learning courses on the basis of partnership projects e.g. the State Border Guard College of the Republic of Latvia, Border Guard Training Centre of the Republic of Poland in Kętrzyn, Border Guard School at the State Border Guard Service under the Ministry of the Interior of the Republic of Lithuania and Estonian Academy of Security Sciences Police and Border Guard College have developed the English and Russian terminology training tool for border guards working at road border crossing points within the framework of Erasmus+ Programme's Project "Strategic partnership for the development of English language training tool for border guards (No. 2014-1-LV01-KA202-000487)". This training tool and materials developed by project participants will be available in Project partners' national Moodle platforms. The training tool includes vocabulary and phrases in English, Russian and national languages, learners will be able to hear pronunciation in target languages, audio and video materials followed by exercises will be available for both classroom and e-course implementation. The authors encourage to use the sample of the above mentioned project and initiate similar partnership projects between several countries in order to develop e-courses.

### **References**

1. ALONSO DÍAZ, L., & BLÁZQUEZ ENTONADO, F. (2009). Are the Functions of Teachers in e-Learning and Face-to-Face Learning Environments Really Different?

- Educational Technology & Society*, 12 (4), 331–343, Retrieved March 14, 2016 from [http://www.ifets.info/journals/12\\_4/28.pdf](http://www.ifets.info/journals/12_4/28.pdf)
2. GHIRARDINI B. (2011) E-learning methodologies A guide for designing and developing e-learning courses, Retrieved March 04, 2016 from <http://www.fao.org/docrep/015/i2516e/i2516e.pdf>
  3. HJELTNES T.A., HANSSON B. (2005), Cost Effectiveness and Cost Efficiency in E-learning, *QUIS – Quality, Interoperability and Standarts in e-learning*. 2004-3538/001-001 ELE – ELEB14. Retrieved March 18, 2016 from [http://www2.tisip.no/quis/public\\_files/wp7-cost-effectiveness-efficiency.pdf](http://www2.tisip.no/quis/public_files/wp7-cost-effectiveness-efficiency.pdf)
  4. SPRIDZĀNS M., PAVLOVIČS J., Elektroniskās apmācības attīstība Valsts robežsardzes koledžā. *Valsts policijas koledžas IV starptautiskās zinātniskās konferences “Moderno tehnoloģiju izmantošana tiesībsardzības institūciju darbā un to darbinieku izglītošana” materiāli* – Rīga 2015. – 198.-210.lpp.;
  5. About Moodle, Retrieved February 08, 2016 from [https://docs.moodle.org/30/en/About Moodle](https://docs.moodle.org/30/en/About_Moodle).