ERASMUS+ Project Strategic partnership for the improvement of e-learning systems in border guard training institutions"
No. 2018-1-LV01-KA202-047003

Guidelines for improving e-learning systems in border guard training institutions

Developed by participants of the project:
State Border Guard College of the Republic of Latvia:
Project manager, lecturer of General Subjects' Department Mārtiņš Spridzāns
E-learning expert, lecturer of General Subjects' Department Jans Pavlovičs

Border Guard School at the State Border Guard Service under the Ministry of the Interior of the Republic of Lithuania:
Project manager, chief specialist of Training Organization Department Ignas Valkauskas
E-learning expert, chief specialist of the Professional Subjects Department Olga Andruškevičienė

Border and Coast Guard Academy of Finland:
Project manager, training developer, e-learning expert Sonja Pyykkönen
E-learning expert, border surveillance subject teacher Jenni Kinnunen
E-learning expert, teacher of English language Salla Lehtiö

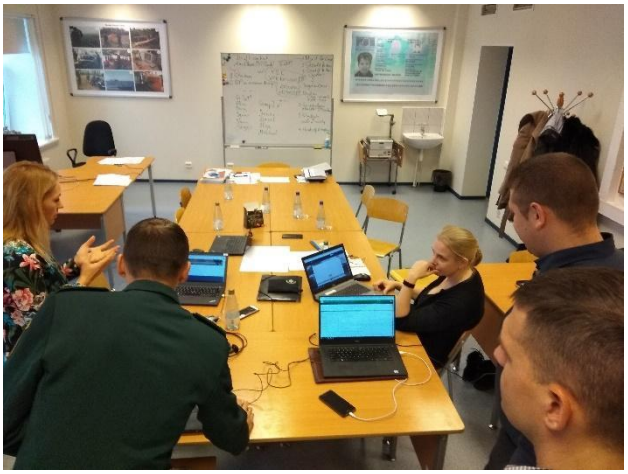
Estonian Academy of Security Sciences:
Project manager, advisor at Police and border guard college Dorel Käosaar
E-learning expert, educational technologist, department of development and international cooperation Alina Gavrijaševa
E-learning expert, educational technologist, department of development and international cooperation Vaiko Mae

2021

Introduction

Evaluation of e-learning systems is vital to ensure successful delivery, effective use, and positive impacts on learners(Al-Fraihat, Joy, Masa'deh, Sinclair, 2019)

These guidelines have been developed by Project partner countries: the State Border Guard College of the Republic of Latvia Border and Coast Guard Academy of Finland, Estonian Academy of Security Sciences, Border Guard School of the State Border Guard Service under the Ministry of the Interior of the Republic of Lithuania.



The Project was initiated to compare, analyse and develop partner countries' e-learning systems. It was launched on September 1, 2018, and was scheduled to end in August 31, 2020. However, due to Covid – 19 impact on travel as well as the need to analyse e-learning systems functioning during emergency situations the Project was extended until June 30, 2021.

Project partners have summarized best practices of e-learning for border guards by joint collaboration efforts and research-based conclusions. During four international meetings and local workshops suggestions for developing e-learning systems for border guards were summarised and teacher digital competence development activities were implemented.

The key topics addressed in these guidelines were selected upon surveys on national needs analysis in e-learning and professional development context. The results of the needs analysis clearly indicated the need in having strategic approach to e-learning development, constant obligation to enhance teacher digital competence improvement as well as requirement to have practical guidelines on how to develop and use e-learning systems efficiently.

The research on needs and SWOT analysis carried out during Project implementation and sustainability indicated the main issues of concern:

1. Lecturers' understanding on design and implementation of e-learning in the learning process is different among the partner countries. There is a need to have a strategic approach with regard to design and implementation of e-learning systems, particularly by continuous teachers' in-service training;
2. With the growth of digital technologies and their potential to facilitate teaching and learning processes there is a need to audit and update e-learning systems, focusing on student centred learning approach by providing collaboration, knowledge sharing and meaningful digital learning opportunities.
3. In order to further develop it is essential to analyse and summarise the best practices accumulated over the years related to efficient integration of education technologies, interactive content development, develop practical examples on how to transform traditional learning materials into e-learning environment.
4. Teachers lack practical experience, they need to see examples on the ways interactive training materials can be developed. They should be provided with the opportunity to see examples of other teacher created e-learning resources and experiment with digital resources.

Partners have developed these guidelines taking into consideration concerns expressed during initial needs analysis, two international surveys carried out in 2019 and 2021 as well as experience accumulated by Project experts.

The goal of these guidelines is to provide ideas and suggestions on how to develop e-learning systems for border guards and further develop teachers' digital competence in order to better harness the potential of digital learning possibilities.

As a result of this Project, guidelines for improving e-learning systems in border guard training institutions have been developed, examples and demonstrations of creating Moodle courses are available in via the following link: http://195.13.183.215/moodle/course/view.php?id=69

These guidelines are intended to increase teachers' and IT experts' theoretical knowledge and practical skills in using Moodle and other tools for developing interactive learning content. Guidelines can be used by border guard and

other law enforcement training institutions' managers who are planning to update or audit their e-learning systems, trainers who need to update their knowledge and skills in using e-learning tools and develop common methodologies for introducing e-learning.

METHODOLOGY

Guidelines have been developed by monographic and document analysis method providing the opportunity to explore and summarize several research conclusions. Authors have compiled and summarised analytical conclusions based on previous research, as well as using the authors' personal pedagogical and IT experience and empirical observations. As the outcome of this Project, Partners have identified possibilities for developing border guards' e-learning by investigating factors which positively or negatively affect directly or indirectly the e-learning systems' and educators' digital competence development. In order to achieve this, scientific, pedagogical and psychological literature was analysed and evaluated, and trainer interviews and survey were conducted. The data obtained was processed and analysed to explore the prevailing situation in the field of e-learning implementation and to define opportunities for enhancing and improving the efficiency of e-learning processes within law enforcement education contexts. To ensure that the validity of the project is based both on scientific literature review and needs analysis of educators in partner countries a survey for teachers in Latvia, Lithuania, Estonia and Finland was conducted in order to prepare suggestions for improving e-learning systems.

Contents

Suggestions for successful implementation of e-learning at border guard training institutions 6
Suggestions for interaction during online lessons 14
Online communication tips and ideas: 27
Benefits and levels of interactivity in e-learning 33
Differences between traditional and e-learning 34
Tailor made teacher competence level descriptor in using moodle 36
Sample of e-learning content and structural quality assessment form 37
Sample of learners feedback on e-learning course 39
Sample of methodological guidelines for preparation, design and implementation of e-courses 40
References used during the development of guidelines 43

SUGGESTIONS FOR SUCCESSFUL IMPLEMENTATION OF E-LEARNING AT BORDER GUARD TRAINING INSTITUTIONS

Suggestion 1 – Define and explain key terms

In order to establish and implement efficient e-learning systems, particularly in specific law enforcement environment, it is important to have a precise and unambiguous definitions related to implementation of e-learning systems and its integration with educational contexts.

Important – When establishing an e-learning system it is important to develop a legal background document e.g. e-learning regulation/order/guide. This document should contain definitions based on analysis of national e-learning definitions, the EU and other international institutions' e.g. UNESCO, OECD used definitions institutions and research conclusions.

When developing e-learning definitions it is essential to communicate across all structural units the key meaning of definitions such as *e-learning vs traditional learning, degree of interactivity, online communication and collaboration*. It is advisable to precisely define what these key terms mean from IT and pedagogical context, have discussions in this matter, share best practices. Persons who are directly involved in e-learning (managers, teachers, IT specialists) should have a common understanding of special characteristics with regard to e-learning. It is important to address and find answers by joint efforts to essential questions as:

1. *What is e-learning?*
2. *How do we understand it?*
3. *How does it differ from traditional learning?*
4. *How does e-learning help you and your institution to develop?*
5. *What is my role in reaching successful learning outcomes*?

Important – When defining key terms carefully analyse national, the EU, UNESCO, OECD developed terms and definitions to align you in international context.

During literature research and discussions among Project experts it has been concluded that there are several different definitions of e-learning depending on the content, format and target audience of the learning process.

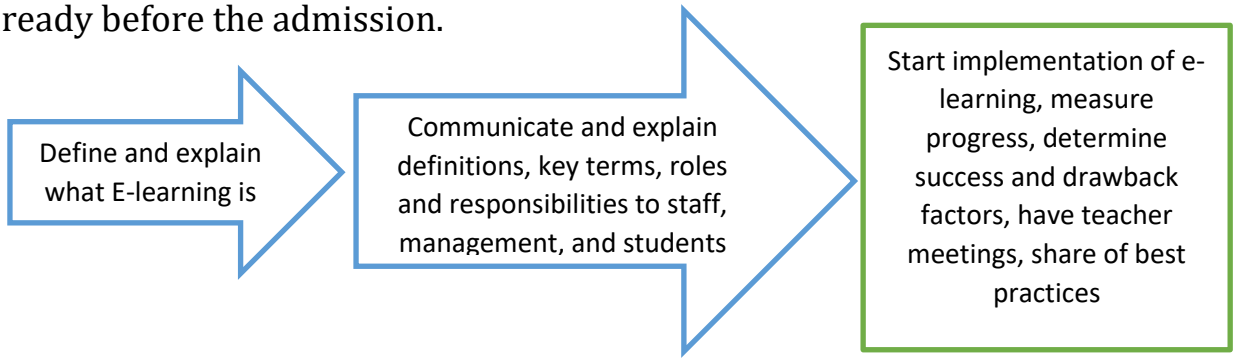
According to UNESCO e-learning is defined as ***all forms of electronically supported teaching and learning, especially the web-based and computer based acquisition of, and engagement with, knowledge and skills. It may take place in or out of the classroom. It is often an essential component of distant education and may involve virtual learning environments***[1].

Research suggests to distinguish what the key words include within different contexts. According to Anohina-Naumeca (2013) terms "distance learning" and "distance teaching" both imply that a learner and a teacher are separated one from another by time, place or both factors. In this context the researcher points out that "distance learning" highlights the learner activity in the learning process, while "distance teaching" stresses the teacher activity usage of terms[2]. In this context it is essential for e-learning providers to explain students how to behave online, what are expectations from teacher perspective (see Suggestion 5).

In order to facilitate common understanding on the key elements of e-learning specifics, Partners suggest developing a tailor-made definition which includes the key message and roles on integration of e-learning in law enforcement education institution, for example:

E-learning is the process of creating interactive and meaningful digital learning content providing digital teacher-student, student-student collaboration opportunities to ensure successful integration of online teaching and learning goals.

Definition and implementation of e-learning should also be reflected in curriculum and each training program. It is also essential to communicate the special characteristics of e-learning and learning outcomes to students already before the admission.



[1] Glossary of Curriculum UNESCO International Bureau of Education UNESCO-IBE 2013 www.ibe.unesco.org
[2]Analysis of the terminology used in the field of virtual learning https://www.researchgate.net/publication/220374372

Suggestion 2 - Define the vision and strategy of e-learning

Vision without action is a daydream.

Action with without vision is a nightmare.

Japanese proverb

Research and the results of needs analysis carried out by partners highlight the fact that the for efficient use of digital learning potential border guard training institutions need to have a clear vision and strategy for initiating or further developing an e-learning system.

E-learning vision must reinforce the academic institution's mission, support its academic programs, and reflect the incorporation of e-learning into the university's instruction and training philosophy. The development of the e-learning vision must include participation from all stakeholders including students, faculty, staff, and administration (Ruby, 2006)[3]

When developing and e-learning strategy it is important to define how it will be measured that it efficiently improves border guards' training and learning processes and outcomes.

Personnel and learners of border guard training institutions should constantly be supported with up-to-date technical means and informative qualification improvement activities.

[3] www.gailruby.com › question3

Research suggests the development of strategy to involve people from within the organization from initial planning and preparation through implementation and integration, and into maintenance. Management plays an important role since the tone, image, goals, and aspirations of an organization, large or small, originate from this leadership position. Leadership should be prepared to support the initiative, assistance with drafting the proper message about the e-learning initiative and preparing recommendations for realignment of current programs including the development of incentives will be offered.[4]

According to UNESCO educational leadership should ensure that ICTs are incorporated in the following **key areas** of educational establishment culture:

1. **Leadership and Vision:** Acquisition of skills needed for planning and developing an ICT strategy, suitable infrastructure, and staff development.
2. **Learning and Teaching:** Developing motivation, skills, and competences required for the successful implementation of the ICT strategy
3. **Productivity and Professional Practice:** Quality of teaching aids and processes resulting from the realisation of the ICT strategy.
4. **Support, Management, and Operations:** Quality of the realisation of the ICT strategy of and provision of technical, professional, and moral support to staff.
5. **Assessment and Evaluation:** Assessment of the quality of the educational process and the role of ICTs strategy within culture of educational establishment.
6. **Social, Ethical and Legal Issues:** Quality of the ICT strategy concerning individual and group rights – issues that are legally regulated or individually solved by the educational establishment and staff (UNESCO, 2011)[5]

[4] Rosenberg, M. J. (2001). *e-Learning strategies for delivering knowledge in the digital age.* New York, NY: McGraw-Hill.

[5] UNESCO, 2011. DIGITAL LITERACY IN EDUCATION Policy Brief https://unesdoc.unesco.org/ark:/48223/pf0000214485/PDF/214485eng.pdf.multi

Suggestion 3 – Establish e-learning development and support team

In order to develop a well-functioning e-learning system a competent leadership team should be gathered. Strong leadership team should create an innovative atmosphere working in synergy with other teachers and IT staff.

Important – In order to develop well-functioning e-learning system, students' involvement in piloting, design and development is essential since they are the potential end-users, furthermore some students are very highly advanced in IT and can be involved as content developers.

To have a well functioning e- learning system as a minimum it is advisable to have one IT manager fully responsible for Moodle administration, and at least one person who is directly responsible for assisting in digital content development (team number largely depends on the size of training institution, digital capacity and vision for e-learning development).

In order to reach successful outcomes of well-functioning e-learning system it is essential to have the following staff:

1. Moodle/System administrator – tasks include platform management, user management, development, cooperation with involved groups, partners from other countries.
2. Support staff – tasks include training (system and production process), technical support (problem solving).

E-Learning Project Team should have the following competencies and roles:

- Project management
- Multimedia production (video production and editing, photographing and photo editing)
- Learning platform specialist (e.g. Moodle)
- E-pedagogy
- Subject-matter expert (teacher)

The roles are generally required at different stages of the process, some of them can be combined into a single job profile: project manager; instructional designer; subject matter expert; online administrator; e-tutor/facilitator; web developer; media editor; technical support specialists. Technology is needed both to create e-learning material and make it accessible to learners. Big projects may require the use of an LMS or other type of learning platform to track and administer learners' activities and manage e-learning content.[6]

In order to successfully design, develop integrate and support e-learning system it is highly recommended for all the persons involved, including IT specialists to understand the basic principles of teaching and learning, particularly in online environment.

[6] https://elearning.fao.org/pluginfile.php/40426/mod_resource/content/1/FAO_elearning_guide_en.pdf

Suggestion 4 – Explain teacher's role in e-learning development and implementation

Teaching paradigm is shifting from teacher centred to learner centred approach, it was particularly experienced within Covid-19 remote learning process. Many teachers found it rather complicated to transfer their traditional classes to online.

According to UNESCO the teacher is responsible for establishing the classroom environment and preparing the learning opportunities that facilitate students' use of technology to learn, and communicate, hence it is critical that classroom teachers are prepared to provide their students with these opportunities. Teachers need to be prepared to provide technology-supported learning opportunities for their students, be prepared to empower students with the advantages technology can bring. Interactive computer simulations, digital and open educational resources, and sophisticated data-gathering and analysis tools are only a few of the resources that enable teachers to provide previously unimaginable opportunities for conceptual understanding. Changes in teacher practice involve knowing where and when (as well as when not) to use the technology for classroom activities and presentations, for management tasks, and to acquire additional subject matter and pedagogical knowledge in support of the teachers' own professional development.[7]

Successful utilisation of digital technology depends not just upon sufficient access to equipment, tools and resources, but also on the availability of sufficient training, and knowledge and support networks for teachers. Providing teachers with this support will allow them to understand the benefits and applications of digital technologies and enable them to use digital technologies effectively. Successful implementation requires support to teachers in the form of opportunities to learn (both formally and informally), embedding digital learning in continuing professional development, direction and leadership within a school, functioning digital equipment and tools, and an environment that gives teachers the flexibility to introduce and use digital learning. Teachers are under constant and ever-increasing pressure to bring

[7] UNESCO ICT COMPETENCY STANDARDS FOR TEACHERS Published in 2008 by the United Nations Educational, Scientific and Cultural Organization 7, place de Fontenoy, 75352 PARIS 07 SP Composed and printed in the workshops of METIA

the latest technologies to bear upon their pedagogy (Steel, 2014)[8]. Digital technology is best used as a supplement to normal teaching rather than as a replacement for it. It is not whether technology is used (or not) which makes the difference, but how well the technology is applied to support teaching and learning by teachers.[9]

Peer learning or sharing of best practices as also evidenced during Covid-19 remote learning is important to have better understanding of what needs to be improved. Caena (2013) and 26 experts from EU MS by working in thematic Working Group 'Teacher Professional Development' note that the process of peer learning enables participants to compare and contrast different policy approaches, learn from other countries' practices, reflect critically on current arrangements in their own countries and draw shared conclusions about what makes for effective policies (Caena, 2013).[10]

Rapid changes from traditional to remote teaching showed us that sometimes there is a limited time we have to new learning environment. Many teachers were unprepared to new challenges. According to the conclusions of research initiated by Scottish government indicate the need of school leaders to direct the development of digital technologies and ensure that teachers have time to undertake training and, when adopting digital teaching, have additional preparation time and opportunities to take risks (ICF Consulting Services, 2015). [11]

In order to have well-functioning e-learning systems it is important to constantly update teacher and IT specialist's competence in technology and pedagogy integration by organizing local, national and international workshops of best practices sharing.

It is highly recommended to introduce new teachers who start their careers at border guards training institutions by providing them gradual introduction to Moodle, access to instructions, examples and support in e-learning development. It is advisable to develop a special teacher digital teaching program, provide tutoring by experienced teachers and IT support staff, integrate peer observations and learner feedback analysis.

[8] Steel S. (2014) *The Pursuit of wisdom and happiness education. Historical sources and contemplative practices.* Sunny Press New York, USA.

[9] Literature Review on the Impact of Digital Technology on Learning and Teaching CHILDREN, EDUCATION AND SKILLS ISBN: 978-1-78544-819-5 Produced for the Scottish Government by APS Group Scotland PPDAS59781 (11/15) Published by the Scottish Government, November 2015
ICF Consulting Services Ltd November 2015

[10] https://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/teacher/teachercomp_en.pdf

[11] Social Research series. Scottish Government. Literature Review on the Impact of Digital Technology on Learning and Teaching CHILDREN, EDUCATION AND SKILLS ICF Consulting Services Ltd November, ISSN 2045 6964, 2015 The Scottish Government St Andrew's House Edinburgh, EH1 3DG

Suggestion 5 - Define and explain teacher –student, student – student interaction peculiarities

Research suggests that during online learning students seek experiences that go beyond reading words on a computer screen and responding to questions by typing their response. The way in which content is presented and how opportunities for learners to engage with content must be grounded with Bloom's taxonomy of higher order thinking and the major tenets of John Dewey's theory of experiential learning.

Learners must have the chance to learn while doing in the online classroom in order to create and produce and evaluate and access deeper learning experiences. The crucial question concerning future eLearning developments underpin the ways instructors and instructional designers will develop courses that encourage deeper learning while fully engaging learners in the learning process (Czerkawski, 2014)[12].

Based on scientific literature research results, empirical experience gathered by Partners the following recommendations are advisable to be considered when preparing for and delivering online lessons:

SUGGESTIONS FOR INTERACTION DURING ONLINE LESSONS Developed by analysis of **Best Practices in Online Teaching Strategies**[13]
Behavioural aspects
1. Check if students' technology skills are sufficient and adequate, have they been instructed on how to use your platform or application. Provide user-friendly guidance.
2. Check if students have needed technical means to participate during online class, e.g., web-camera, microphone.
3. Establish clear communication rules i.e. when do you require to have cameras on or off, to whom to refer in case of technical issues. Set personalisation rules e.g. by publishing user photographs to allow other members and teacher to be visualized (profile photos)

[12] https://www.researchgate.net/publication/305713495_An_Instructional_Design_Framework_for_Fostering_Student_Engagement_in_Online_Learning_Environments#fullTextFileContent

[13] https://www.hanoverresearch.com/

4. Encourage active interaction with teacher and other students as a key element for successful communication as a border guard with border crossing persons.
5. Some students may have both technical and psychoemotional issues, it is important to communicate directly
6. Actively encourage (depending on the subject taught) needed skills development e.g. speaking and writing interaction to improve speaking and writing performance.
7. Use various communication techniques to enhance online collaborative and peer learning.
8. In case of need (shyness, lack of group leadership) initiate and scaffold group discussions
9. Strategically plan and balance online and independent communications by/with student-student and student-teacher. Plan for increased time for student interactions as compared to traditional courses. Use different learning strategies e.g. questioning, interviewing, reviewing, class discussion, agreeing, disagreeing etc.
Learning outcomes and feedback
1. Clearly explain institutional policy on cheating and plagiarism.
2. Research regularly and evaluate the success and failure factors of online communication outcomes (e.g. electronic test results, individual pair, group online work evaluations)
3. Monitor each student's progress, particularly those with weaker learning outcomes. Whenever possible facilitate coaching, peer knowledge construction activities.
4. Try to respond to written questions timely, if applicable establish list of frequently asked questions (it will help you to avoid duplication of your answers).
5. To minimise lack of socialising provide students with continuous, frequent support and feedback.
6. Set clear course/lesson learning requirements, if needed give negative comments in private, if possible by having a phone discussion.
Online learning environment
1. Create welcoming, safe, nurturing online environment.
2. Start online course with all students together at the same time. Include warm-up period with light-hearted exercises aimed to help student get to know one another, build group spirit

3. Use structured activities to provide an effective framework for online learning
4. Use flexible deadlines to motivate students, maintain communication, and allow for technical problems.
5. Create social interaction through group collaboration to facilitate high achievement.
6. Present course content in a manner that hierarchically structures the sequence of information.
7. Include Moodle activities to enable student to interact with the content, other students, and instructor.
8. If applicable include additional sources e.g. links to external sources, use streaming audio for reading online, Youtube, etc.
9. Present problem-solving situations in a realistic context.
10. Provide opportunities for students to question instructor to insure accuracy of understanding.
11. Create opportunities for students to communicate with each other to share understanding of course content.
12. Provide opportunities to collaboratively construct knowledge based on multiple perspectives, discussion and reflection. Provide opportunities for students to articulate and revise their thinking to insure accuracy of knowledge construction.
13. Ensure equitable environment exists for gender differences in learning styles, reduction of barriers to participation, and communication. Distribute proportional workload through group, support female students 'preferred method of connected learning, and promote gender equality.
14. Provide equal access to the shared conversation in the course.
15. Allow time for reflection at end of course.
16. Provide discussion forums encouraging open and honest dialogue.

It is also advisable to take into consideration the following **factors that bring about successful implementation of digital learning and teaching**:

1. **Training and support not only to use equipment but to exploit digital tools and resources for teaching;**

2. **Overcoming teachers anxieties about digital teaching, not just about the use of the technology but also the use of different learner centred pedagogies;**

3. **Allowing teachers to experiment with technology;**

4. **Networking with other teachers and education institutions;**

5. **Maintaining and upgrading equipment and using tools that are compatible across many systems. If these were adopted, more effective implementation of digital technologies should be expected to increase efficiency**[14]

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.[15]

IMPORTANT - It is advisable to balance teachers workload during online lessons and provide support to develop interactive online course materials. In comparison to traditional class additional time to deliver high quality instruction online must be provided.

[14] Fullan, M. (2013). Motion Leadership in Action. Thousand Oak, CA: Corwin Press; Toronto: Ontario Principals' Council

[15] Beatrice Ghirardini, 2011. E-learning methodologies A guide for designing and developing e-learning courses. http://www.fao.org/3/i2516e/i2516e.pdf

Suggestion 6 - Explain Moodle pedagogical principles and increase teacher digital pedagogy awareness

Project partner countries are using Moodle for implementation of e-learning. According Dougimas (1999)[16] Moodle is good collaborative environment which helps us keep our eyes open for opportunities to allow the other participants in our learning situation to share their ideas. Dougimas describes Moodle as beneficial since we learn particularly well from the act of creating or expressing something for others to see. Such learning is best achieved when we are expressing and presenting posts, projects, assignments, constructions etc. for others to see and there is a possibility learn by observing the activity of our peers.
Furthermore, Dougimas concludes that by understanding the contexts of others, we can teach in a more transformational way (constructivism) and finally concludes that learning environment needs to be flexible and adaptable, so that it can quickly respond to the needs of the participants within it which is also possible in Moodle.

It is important to understand that pedagogy and software design are closely intertwined in online learning. According to research[17] the following principles need to be taken into account when designing e-learning content in Moodle:

1. **All of us are potential teachers as well as learners - in a true collaborative environment we are both** (forums, wikis, glossaries, databases, messaging, students can be allowed to facilitate forums, create quiz questions or even control the course layout, teacher can allow students the ability to delete posts.

2. **We learn particularly well from the act of creating or expressing something for others to see** (see course structure, discussion in forums, sharing of media and documents, group work collaborations, glossaries, lists of definitions, databases of digital photos or a library of references.

3. **We learn a lot by just observing the activity of our peers** The participants link in the navigation block is the main place where you can see everyone in your course. It shows a lot of information about your participants and how recently they've been there. The Recent Activity block allows to see what has happened recently, and via link you can see reports with more detail. Things that happened

[16] https://docs.moodle.org/all/is/Pedagogy
[17] MOODLE AND PEDAGOGY https://docs.moodle.org/310/en/Pedagogy

not only include changes to the course and forum posts, etc, but also things like assignment submissions and quiz attempts. Finally, almost all the modules will "tag" an entry or change with the name of the user, so that you can see who did what and when.

4. **By understanding the contexts of others, we can teach in a more transformational way (constructivism)**

   There are many different ways to find out about people. Access to this information can be decided on a site basis (different sites have different privacy policies):

   - ✔ The user profile contains several fields where people can provide information about their background, etc. In particular there is a user profile photograph, which appears throughout Moodle whenever that person writes something. The photo links back to the profile page.
   - ✔ A compendium of forum posts (and discussion starters) by that person in that course (or across the site).
   - ✔ Individual blogs allow people to express things in a public but reflective way, often providing access to thinking that might not normally be expressed in, say, a forum. Others can give comments on the blog posts.
   - ✔ Overall activity reports show all the contributions from a user in a course, including assignment submissions, glossary entries, etc.
   - ✔ User log reports show detailed logs of every action taken by a person in Moodle, as well as graphs showing overall activity statistics.
   - ✔ The survey module provides a variety of proven questionnaire instruments for discovering interesting information about the state of mind of the group.

5. **A learning environment needs to be flexible and adaptable, so that it can quickly respond to the needs of the participants within it**

   - ✔ The course page itself is the main tool for a teacher, allowing them to add/remove and structure activities as necessary. Access can be restricted according to time, conditions or user profile fields.
   - ✔ Roles can be applied individually in every context across the site, and can be further tweaked with overrides. If you want to create

one single quiz where everyone has access to everybody's results, or allow supervisors of students to see parts of your course, then you can.

- ✔ The grade book is automatically maintained, and reflects the activities in the course at any given time.
- ✔ There are preferences for many aspects of appearance and behaviour, at site, course and activity levels, allowing educators to fine-tune the behaviour of Moodle in many ways.
- ✔ External systems can be integrated easily, to maintain authentication, enrolments and other things, allowing Moodle to react smoothly as data in other systems is modified.

Teachers should be empowered to use their professional knowledge, skills and expertise to deliver the curriculum effectively. To be prepared for the future, individuals have to learn to think and act in a more integrated way, taking into account the interconnections and inter-relations between contradictory or incompatible ideas, logics and positions, from both short- and long-term perspectives. In other words, they have to learn to be systems thinkers (OECD, 2018).[18]

Teachers are encouraged to constantly develop their digital competence. Digital competence encompasses the knowledge and skills required for an individual to be able to use ICT to accomplish goals in his or her personal or professional life. Digital competencies should be perceived as not only concerned with technical skills, but more focused on cognitive and social and emotional aspects of working and living in a digital environment. (Eshet-Alkalai, 2004)[19]

Teachers should know and understand key concepts, strategies, methods and techniques in the field of information and communication technologies, be familiar with appropriate computer tools, services and platforms, and have knowledge and understanding of the possibilities and constraints of using digital technologies in the education process and their scientific and professional work. They should be able to efficiently identify, select, organise and analyse digital data and content, taking a critical attitude towards their relevance, credibility and reliability. By using appropriate computer tools, services and network platforms, they should also be able to effectively communicate, collaborate and share digital educational and professional content with students and other teachers, respecting the relevant codes of

[18] OECD (2018). The Future of Education and Skills. Education 2030. https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

[19] Yoram Eshet-Alkalai, 2004, Digital literacy: A conceptual framework for survival skills in the digital era, Journal of Educational Multimedia and Hypermedia, 13(1):93–106.

ethics and appreciating generational and cultural differences. With the aid of appropriate digital resources, teacher should also be able to create new and adapt the existing digital educational content, following key aesthetic principles in their design. Teachers should definitely know and understand security risks and threats in a digital environment and the impact of digital technology production and use on health, energy and the environment. On that basis, they should systematically and promptly apply effective procedures, tools and services to protect digital devices, data and content, including information about students and the education process. They should use digital technology effectively, considering basic ergonomic principles, energy consumption and environmental impact. Finally, teachers are also expected to consistently respect and advocate high ethical principles, copyrights, licences and other legal provisions governing the use of digital technology (Čižmešija, Diković, Domović et al. 2018)[20]

Since educational technologies will continue develop rapidly (virtual reality, AI) both in-service teachers and newcomers need to be constantly updated on the best practices of digital technology and pedagogy integration, particularly focusing on interactive content development possibilities (e.g. H5P branching scenarios, etc.) and their meaningful integration in law enforcement training process both synchronously and asynchronously.

[20] Aleksandra Čižmešija, Marina Diković, Vlatka Domović, Mina Đorđević, Renata Jukić, Ph.D. Svjetlana Kolić-Vehovec, Morana Koludrović, Jasminka Ledić,. Sanja Lončar-Vicković, Daliborka Luketić, Branko Matulić, Renata Šamo, Marko Turk, Vlasta Vizek Vidović, Katja Vojvodić, HANDBOOK FOR TEACHING COMPETENCE ENHANCEMENT IN HIGHER EDUCATION, Co-funded by the Erasmus + Programme of the European Union. Ministry of Science and Education of Croatien, ISBN: 978-953-8103-21-6, 2018

Suggestion 7 - Establish close teachers and IT specialists collaboration during development of e-learning content

Research conclusions indicate that in many cases electronic teaching materials are produced by personnel who are not competent in the details of the subject matter presented thus problems can arise that of how a specialist in a particular field – the content provider – can convey to the personnel who are producing the materials – the materials developers - what should feature in the teaching materials.
The creation of interactive electronic teaching materials whenever IT specialist support is needed should contain the following steps[21]

1. ***Content developers show the content authors what possibilities are available in electronic teaching materials (e.g. interaction possible via H5P module), and provide written description with understandable terminology of the development environment.***

2. ***Development (jointly) of script (synopsis) of the training content, on the basis of which the digital materials will be produced. The most important attribute of the script is clarity i.e. the material developer should know exactly where the materials will be used, and what will feature in them (IT developers should also consider themselves as end-users of the resources and provide constructive suggestions to teachers).***

3. ***Checking and proofreading, editing, content and linguistic aspects. It is advisable to crosscheck materials by content and linguistic experts include high quality photo, video, audio materials (preferably created in studios).***

4. ***Integration, piloting further editing and testing, to determine possible drawbacks.***

[21] https://www.researchgate.net/publication/288671403_Development_of_Teacher_Competencies_in_a_New_Learning_Environment_in_Higher_Education

Suggestion 8 - Structure e-learning content development system

It is very important to have well designed e-learning content to have successful learning outcomes. Developers need to take into account several factors e.g. needs of learners, environment of e-learning, measure digital capacity such as digital competences of trainers, adequacy of infrastructure, practical implementation, possible risks to be encountered aw well as quality assurance mechanism.

Based on share of best practices, when designing e-learning course it is highly advisable to use 5 step design process ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) which has been widely used for e-learning. This model was developed in the 1970's[22] and updated in 2009.

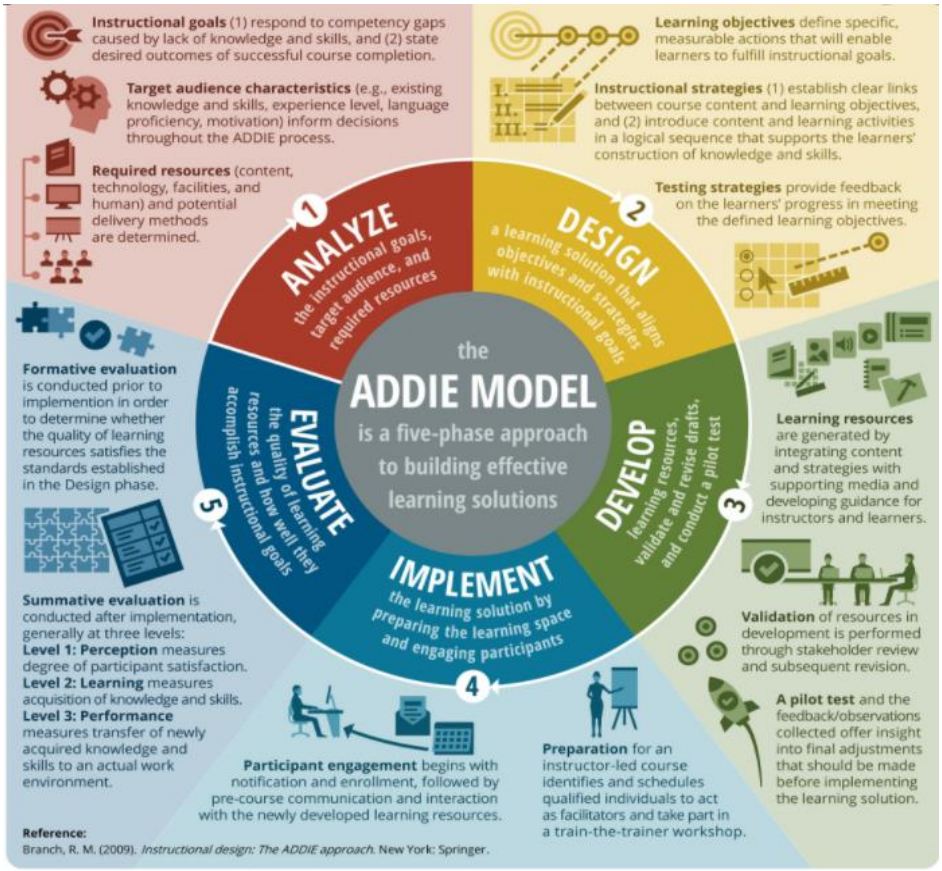


Figure 1: Steps in e-learning design - The ADDIE model[23]

Having in mind that e-learning content development team might have mixed competencies, particularly in pedagogy when designing and implementing an

[22] https://www.learnupon.com/blog/addie-5-steps/

[23] https://elearninginfographics.com/the-addie-model-infographic/

e-learning course it is advisable to use **Robert Gagne's *Nine Events of Instruction:***

Nine Events of Instruction:

1. Gain attention: Use media relevant to the topic.

2. Describe the goal: Provide clear objectives to the overall course goals.

3. Stimulate prior knowledge: Review previously presented material and concepts and connect them to the material to be addressed in the current module.

4. Present the material to be learned: Readings, presentations, demonstrations, multimedia, graphics, audio files, animations, etc.

5. Provide guidance for learning: Discussions to enable learners to actively reflect on new information in order to check their knowledge and understanding of content.

6. Elicit performance: Activity-based learning such as group research projects, discussion, homework, etc.

7. Provide feedback: Immediate, specific, and constructive feedback is provided to students.

8. Assess performance: Assessment activity such as a test, research project, essay, or presentation.

9. Enhance retention and transfer: Provide opportunities for additional guided practice or projects that might relate learning to other real-life activities several researches. [24], [25]

Research suggests e-learning instructional designers should design e-learning contents with excellent studying effect. It is necessary for instructional designers to have fundamental competency units as need analysis, analysing environment of system, planning project, designing contents, developing manuscript, developing storyboard, developing contents, test and evaluation of contents, completion of contents. It is necessary to develop various training programs for development of working competencies of instructional

[24] https://www.ispringsolutions.com/blog/instructional-design-principles
[25] https://files.eric.ed.gov/fulltext/EJ1154117.pdf

designers. It is also necessary to develop and manage e-competency system which manages competency of instructional designers. Thirdly, it is necessary to revise curriculum focusing on duties in order to raise capable instructional designers.
Fourthly, it is necessary to strengthen the evaluation system of contents by users and provide continuous feedback.[26]

Research conclusions suggest the quality of an e-learning course is enhanced by:

1. **Learner-centred content:** E-learning curricula should be relevant and specific to learners' needs, roles and responsibilities in professional life. Skills, knowledge and information should be provided to this end.
2. **Granularity:** E-learning content should be segmented to facilitate assimilation of new knowledge and to allow flexible scheduling of time for learning.
3. **Engaging content:** Instructional methods and techniques should be used creatively to develop an engaging and motivating learning experience.
4. **Interactivity:** Frequent learner interaction is needed to sustain attention and promote learning.
5. **Personalization:** Self-paced courses should be customizable to reflect learners' interests and needs; in instructor-led courses, tutors and facilitators should be able to follow the learners' progress and performance individually.[27]

As concluded by researchers Angeliki, Asimina, and Eleni (2005) effective eLearning has to be successful in reaching learning objectives, easy accessibility, consistent and accurate message, easy to use, entertaining, memorable, relevant and reduce training costs.[28]

[26] Yong Kim. Development of e-Competency Framework for e-Learning Instructional Designer Indian Journal of Science and Technology, *Vol 9(26), DOI: 10.17485/ijst/2016/v9i26/97318, July 2016*
[27] Beatrice Ghirardini, 2011. E-learning methodologies A guide for designing and developing e-learning courses. http://www.fao.org/3/i2516e/i2516e.pdf
[28] Angeliki, P., Asimina, M., Eleni B. (2005) When Instruction Meets Design: Embedding Instructional Theory Paper presented at the International Association for Education and Training, Rome, Italy. Downloaded from www.dis.uniroma1.it/~lhci/018.pdf

Suggestion 9 - Establish and maintain online communication and collaboration rules (netiquette)

In order to have common understanding among teachers and learners (avoid misunderstandings) during e-learning, particularly during online lessons it is essential to explain students the key principles and peculiarities of the e-learning process. Research encourages communicating with students and encouraging them the following to be considered:

Expectations for students online behaviour[29] (remind especially at the beginning of the e-course)

1. **Be punctual.**
2. **Use your microphone and video camera upon request of teacher.**
3. **Minimise rapid movement distractions and background noises during class and your speech.**
4. **Be professional, participate actively.**
5. **Do not act impulsively.**
6. **Avoid typing in ALL CAPS and exclamation marks!.**
7. **Respect diversity of thought/opinion.**
8. **Strive for clarity, brevity, and accuracy.**
9. **Use appropriate language and grammar.**
10. **Be friendly, positive, and self-reflective.**
11. **Respect other's time by staying on topic, providing useful dialogue, etc.**
12. **Avoid sarcasm as tone is hard to detect in the written language and can be taken seriously or offensively.**

Behaviour problems can be managed beforehand by setting clear classroom expectations and referencing them frequently. You might feel like your students already know the drill, but clarifying rules and expectations helps avoid misunderstanding or misbehaviour while increasing cooperation,

[29] https://www.uky.edu/ukonline/sites/www.uky.edu.ukonline/files/DL%20Netiquette.pdf

compliance and positive behaviour. This is especially important with so many new rules around things like masks and social distancing[30].

When teaching online it's essential to have patience and compassion in any classroom setting. When you're dealing with behavior problems, your growing relationship will be the foundation for a stable learning environment. Try and keep things positive, light, and engaging. Usually, online classes offer more flexibility for both the student and teacher. Therefore, students may become distracted at home. Be sure your class pays attention to the details. Ask them to repeat anything you feel they didn't quite understand. Check for understanding so they are aware of their homework and expectations. These strategies can help to prepare for the next session before class is over[31].

In order to have a successful online learning environment it is advisable to use the following **online communication tips and ideas:**

Before the meeting

1. If it will be your first time it is advisable to Practice with your colleagues or IT specialists videoconferencing platform.
2. Make sure you know the basic functions of videoconferencing platform i.e. „Mute" „Share screen" „Enable breakout rooms", it is advisable first to try out with your colleagues.
3. Make sure link of joining to your meeting has been sent in advance, if needed add the meeting to your calendar.
4. Make sure students are familiar with the videoconferencing platform you are using and they have installed the application on their computers.
5. Make sure you test slides on a smartphone before shooting your lectures so all text is readable on small screens. Font sizes, colours, template designs and screen ratios can be double-checked Regularly check if latest updates are installed to your videoconferencing platform to have it running smoothly[32].
6. Be ready to start the meeting at least five minutes before actual meeting time. Check internet connection, if needed open the presentation you are going to show.
7. If needed prepare your online lesson agenda/ plan.

[30] https://childmind.org/article/managing-students-behavior-during-remote-or-hybrid-learning/
[31] http://www.ednewsdaily.com/5-ways-to-manage-behavior-in-an-online-classroom/
[32] https://www.edutopia.org/article/5-research-backed-tips-improve-your-online-teaching-presence

8. Have plan B if something goes wrong with internet connection.

During the online lesson

1. Give some time for students to log in to your videoconferencing platform.
2. Look directly in camera, eye contact is extremely important since looking into the camera is the equivalent of looking into the person's eyes. Getting used to it will take some time until you're comfortable with it.
3. Make sure lighting in room is appropriate to see your face.
4. Research has shown that lecture videos that show instructors' faces are more effective than simple narrated slideshows. Intersperse your slides with video of yourself.[33]
5. Use clear instructions, remind the lesson goal and outcomes.
6. Use an opening exercise e.g. warm-up activity to gain attention.
7. Try to avoid long monologues, interact with students as often as possible for example use https://www.sli.do/ https://padlet.com/ https://kahoot.it/ and other interaction resources.
8. Use breakout rooms to create pair and group work activities where they have the possibility of collaboration and peer learning
9. Set positive communication and discussion climate by encouraging online discussion, seek to settle constructively disagreements, by reaching consensus, reinforce participation in and summarize discussions.
10. When waiting for students answers to a question there might be a short delay. In comparison to traditional class during online class it is advisable to wait on average up to 20 seconds until you get the response from students.
11. Encourage students to raise hands in videoconferencing application or use chat.
12. Check settings of your videoconferencing platform whether you have sound notifications (some teachers may be disturbed by online chat, the need to admit students who are late to online lesson)
13. If your videoconferencing platform is time limited e.g. 40 – 50 in basic plan (Zoom or CiscoWebex) minutes make sure you remind students on timing and re-joining possibilities.

[33] https://theconversation.com/coronavirus-14-simple-tips-for-better-online-teaching-133573

Ending the online lesson

1. Thank the audience.
2. Ask if they have any questions, encourage to write privately (for shy students)
3. Use closing activity which sums up covered during the lesson
4. Provide home assignment, independent learning or further learning advice. If necessary send home assignment instructions to their e-mail or write in chat
5. Stay online for a while for shy students to ask you questions, be the last to leave the online classroom.

Suggestion 10 - Establish specific quality assurance system

In order to evaluate efficiency and for improving the quality of e-learning it is essential to define quality areas and principles need to be taken into consideration in order to evaluate and further develop e-learning system. It is advisable to include quality area and quality measurement evidence based recommendations of the European Model of Quality Management in Adult Education[34]. The following quality measures have been adopted in the context of e-learning:

Quality area: Principles (image of the organization that is recognizable from the outside and must be able to lead the organization internally):

1. Does the institution have clear e-learning principles?
2. What is the overall image of the institution's e-learning system, the goal, the vision, how is it being communicated to the lecturers?
3. What are the main pedagogical approaches in the implementation of the e-learning process? What is expected from lecturers?
4. What is the main content and characteristics of e-learning provided, what are the target groups?
5. What is the understanding of the quality of e-learning, what is the concept of evaluation?

When developing these principles, it is very important that the members of the organization participate in the development process, thus the principles will become common and integrated.

Evidence for practical implementation of this field: written e-learning principles and policy, e-learning model, statutes, publications.

Quality area: core e-learning processes (sequence of defined work steps defined by the organization and to be performed to achieve a specific result, such as developing e-learning):

1. How are e-learning programs prepared and the range of e-learning courses offered?
2. How e-learning courses are offered to participants?
3. How are the target groups involved in the development of e-learning programs and how do they receive information about the offer to participate in the e-learning course?

[34] http://www.laea.lv/UserFiles/File/publikacijas/MQ-A5%20anglju%20val.pdf

4. According to what criteria are lecturers selected for the development and implementation of an e-learning course?
5. How is the qualification of teachers documented, for example for the development of a new e-learning course or quality assessment?
6. What are the opportunities for further education of lecturers?
7. How new e-learning programs are being introduced? How is the quality of the learning process considered and guaranteed?
8. How is the final evaluation of e-learning programs carried out?
9. What are collaboration principles of administrative services of the e-learning course support and the pedagogical side? Who is responsible for the e-learning process?

Evidence: Sequence diagrams (info graphic) of the main e-learning and collaboration processes, written description of the e-learning programme development planning, e-learning programs.

Quality area: Management (control of all processes and quality development):

1. What are the management principles? The role of management? Do staff and lecturers know the principles? How are decisions discussed? How clear and transparent is the decision structure as a benchmark for each employee and lecturer, for example, for the improvement of the e-learning process?
2. Who is responsible for the meetings, topics and minutes, or are the minutes available (systematic organization of meetings is the basis for effective communication).
3. What is the strategic development that the institution wants to achieve after 1-2 years, which is planned and done to get there? How does the institution check the achievement of its goals? How timely can we plan actions in the short, medium and long term? Who is responsible for planning process?

The environment in the organization is constantly changing. To be prepared for the demands of this change, an organization must define its strategic goals. A specific plan on how to meet and then test e-learning management context is important.

Evidence: organization's structural scheme, written description of principles and decision-making processes, system of team meetings or other internal discussions, organization management manuals, strategic plan.

Quality area: communication inside the organization and with other organizations, feedback:

1. What are communication partners, forms and types, goals and content?
2. What is the process of communication between the levels of the staff hierarchy?
3. Is communication between all staff facilitated in the organization?

4. Is management informed about goals, results and challenges?
5. What are the information channels?
6. What information do guest lecturers need, how do we contact them?
7. Who is responsible for communication? Do the target groups (students) know how to communicate with our organization?
8. Are we ready and open to all kinds of comments?
9. How do we treat the results of this communication and how can we guarantee the results?
10. How do we work with other partners, stakeholders, what kind of cooperation takes place?
11. What is our role in this cooperation and what are our goals?

Evidence: program, e-learning materials, information flow chart, internet usage rules. Consultation procedure guidelines, map of information channels.

Quality area: resources (human resources, knowledge, infrastructure)

1. Personnel organization: How are positions and activities defined?
2. How are their tasks and goals described?
3. How are rights and obligations defined?
4. How are lecturer profiles regulated and defined?
5. What is the development of staff, in which areas, what forms of participation are possible?
6. What future tasks will require additional staff?
7. What type of planning exists for professional development?
8. What qualifications and experience should the staff and lecturers have?
9. Are the lecturers sufficiently qualified?
10. How cooperation between teaching staff and guest lecturers is are regulated?
11. What pedagogical support do lecturers receive?
12. Are lecturers offered regular training?
13. Is the quality of teaching controlled?
14. What is the workload planning and how can lecturers influence this process?
15. What kind of technical support is required?
16. Is the available technical support appropriate for the implementation of modern interactive educational methods?
17. Are there schedules for reserving and using technical means?
18. How is internal knowledge share management guaranteed?
19. Is the knowledge of the lecturers up-to-date?
20. Who has access to new knowledge? How and where do we obtain additional knowledge and information?

Evidence: job descriptions, statutes, work plans, minutes of meetings, schedules of teaching aids usage, list of technical resources, seminar planning schedules, economic guidelines, lecturers' CVs, e-teaching portfolios.

ANNEX 1

BENEFITS AND LEVELS OF INTERACTIVITY IN E-LEARNING[35]

Interactivity is defined as the way and type how students interact in an online course. E-learning course can be characterized by the degree of interactivity:

1. Passive - no interactivity: Direct, clear, content-based eLearning condition. Students have various content-based assets, for example, broad research and prevalent web journals. This level may incorporate connects to recordings, podcasts, basic pictures and illustrations and test questions.

2. Limited eLearning Interactivity Level: students might be required to associate with the learning condition through interactive "problem areas", movements, interactive activities with sight and sound. Such interactivity stretches out a level of control to the student.

3. Moderate eLearning Interactivity Level: Students have marginally more control over their learning knowledge. These eLearning courses are more modified and modern. This level may include: energized video, altered sound, complex simplified cooperation, reenactments, stories and spreading situations, and multimedia.

4. Full eLearning Interactivity Level: students have full control over their learning condition. They are required to collaborate with the screen at each progression of the ideal introduction. They are given opportune criticism that guides them in basic leadership and aids them to the following stage.

Interactive eLearning cases at this level include: interactive diversions, recreated work execution works out, modified sound or recordings, symbols, stories and situations, and in addition interactive media.

Advantages of interactivity:

1. Is Emotionally Arousing
2. It Empowers Reflection
3. It Lifts Engagement
4. It Enhances Learning Retention
5. It Advances Motivatio

[35] (https://elearningindustry.com/levels-of-interactivity-in-elearning-advantages-4)

ANNEX 2

DIFFERENCES BETWEEN TRADITIONAL AND E-LEARNING

In order to provide deeper insight to e-learning peculiarities compared to traditional training and learning, the main differences between traditional and classroom, the table below highlights the main advantages of e-learning.

Example of traditional classroom	Example of e-learning classroom	Advantages for students	Advantages for border guard management	Risks and disadvantages
Trainer presents a topic information in classroom	Trainer presents specific topic distantly (online) e.g. videoconferences or webinars	Students can learn from their home or workplaces,	Border guards can develop their qualification without being distracted from their workplaces for longer periods, possibilities to save finances e.g. related to accommodation etc.	Some students may lack motivation to study on their own. Physical movement (change of atmosphere) can sometimes be more motivational than online learning.
Trainer communicates with students only during classroom, e.g., individual, group discussions	Trainer-student discussions can happen with students online, teacher can set breakout rooms, use telephone, chats, forums, social networks	Discussions can continue outside the classroom, there is a possibility to ask questions of interest, students have more time to investigate topic questions	Possibility to be involved and participate in discussions, give advice from managerial, practitioners' perspective	Some teachers are unwilling to create online discussions since traditional teacher centred approach is being applied. Online discussions need structured guidance.
Trainers present specific topic in classroom, students take notes of	Training content – presentations etc. are easily accessible to students at	Students have possibility to access material, study at their own pace, print, adapt	Materials are accessible to managers, e.g. to perform training of other trainers (ToT), easier	Restricted information can be unintentionally disseminated, mishandled. Teachers need to

presentation material e.g. power point presentations which are sometimes for classroom use only and are not always available or provided to students to be used for independent learning	any time, can be downloaded	material, revise the topic covered during classroom session.Advantageous to those who regularly skip lessons (sick leave e.g. long absence)	dissemination of information	be trained to create presentations for independent learning, regular class presentations should be structured and transformed for online learning (e.g. understandable and self-explanatory as if without teacher)
Trainers give printed worksheets for practice during classroom, students and trainers check correct answers	Students have possibility to study, perform knowledge assessment by electronic exercises and receive instant feedback from interactive digital resource	Students have possibility to learn materials at their own pace, any time and place, redo the tests to improve their knowledge	Managers can supervise, control, guide subordinates' learning progress, give advice and support for better learning outcomes	Online tests (without direct teacher supervision) cause the risk of plagiarism and cheating
Periodic knowledge check in paper tests.	Knowledge is checked by electronic tests, instant feedback is provided by computer, teachers don't have to mark manually	Students receive instant feedback, they don't have to wait for paper tests to be corrected, they can redo the tests for learning purposes.	Supervisors can see results, compare and analyse progress, regress, correlations in order to make improvements of further learning	Online tests (without direct teacher supervision) cause the risk of plagiarism and cheating, face to face interactions and knowledge check is advisable

TAILOR MADE TEACHER COMPETENCE LEVEL DESCRIPTOR IN USING MOODLE
Basic level - beginner: Knows the basic functions and icons of Moodle, is able to connect, turn on editing, edit content by adding activities or resources (text, tables, images, audio, video files, add references to external link,), is able to edit and add new e-sections of the course, is aware of the copyright of the content as well as the need for open access digital resources to ensure the enrichment and accessibility of the learning process. Some activities require support of another lecturer or IT specialist
Intermediate level - researcher: is able to add a test to the e-learning course and develop test activities with knowledge of different types of questions for the test tasks, which contain questions with multiple choice, numerical questions and combination of answers. Manages basic test settings - synchronization (date and time from which the test will be available, time limit), rating categories (number of attempts allowed, additional restrictions on attempts)
Advanced level - expert: - knows the nature and advantages of test question behaviour test design, general feedback, general module settings, access restriction, activity execution, badges, tags and competency options in the pedagogical aspects of the learning process.
Innovation level - leader: - advanced knowledge on Moodle technical possibilities and administration functions, is able to integrate additional activities, create e-learning improvement regulations, participates in e-learning policy making activities, actively participates, promotes, disseminates knowledge and experience to other colleagues.

Annex 4

SAMPLE OF E-LEARNING CONTENT AND STRUCTURAL QUALITY ASSESSMENT FORM

E-course name:
E-course teacher:

No	Evaluation criteria	Yes/No *	Remarks
	The content of the e-course ensures independent acquisition of the e-course and achievement of the set learning goals:		
1.	is appropriate for the target audience, the amount of information is sufficient to achieve the goal of the program		
2.	various interactive teaching methods, various multimedia materials for effective content learning have been used		
	Compliance of the quality of e-course materials with the quality evaluation criteria of e-course materials specified in the "Conditions for Development, Design, Review and Issuance of Teaching Aids":		
3.	e-materials promote the learning of the program through self-study.		
4.	the information is presented in a sequential, easy-to-understand, logical and self-explanatory way for the acquisition of the study content in the form of self-study without immediate feedback from the lecturer.		
5.	materials include complementary textual, audio and visual information		
6.	a uniform design style is followed.		
7.	graphic design (font size and type, use of colors, format) ensures a good perception of the learning content.		
8.	satisfactory technical and media quality is ensured (video and audio are uninterrupted, images are clear, sound quality is appropriate, etc.).		
9.	comply with legal, ethical and moral aspects.		
	Structure		
10.	structure and arrangement (sequential and / or hierarchical) promotes self-directed learning.		
11.	intuitive navigation is provided.		
	A table of contents has been created for the e-course, which includes:		
12.	e-course description.		
13.	explanation of terms, abbreviations and symbols used (if necessary).		
14.	titles of chapters and subsections		
	The description of the e-course contains information about:		
15.	the target audience, the objectives, the tasks and the results to be achieved.		

16.	duration, description of implementation, general information on the content of the e-course.		
17.	final / interim examinations (e-course acquisition quality assessment criteria and procedures).		
18.	information about the e-course teacher (moderator)		
	Sections of e-learning course contain:		
19.	title and table of contents.		
20.	a short chapter annotation.		
21.	chapter summary (as applicable).		
22.	a list of references and sources of information to be used, or references.		
23.	additional references to literature and information sources.		
24.	conditions for the performance of activities (tests, tasks, exercises, etc.)		
25.	diverse and interactive self-assessment tasks and questions on the subject.		
26.	opportunity to express an opinion, for example in a forum discussion.		
	Final / interim tests		
27.	Includes information about the final / interim test, test questions, tasks, assessment etc.		

The developed e-course can receive a positive evaluation in general, if no more than eight criteria have received a rating of “no”.

* Each criterion is assessed as "yes" if it is at least 50% met.

Annex 5

SAMPLE OF LEARNERS FEEDBACK ON E-LEARNING COURSE

(Questions (depending on the purpose) can be formed by open, yes/no questions or by Likert (Strongly Disagree = 1 and Strongly Agree = 5)

Dear students. Thank you for active participation in this e-course, In order to improve the implementation of e-learning courses we kindly ask you to submit this online feedback form. This questionnaire is anonymous, please feel free to submit constructive feedback and proposals.

1. **Learning outcomes and course expectations were available and have been clearly explained.**

*Explain positive and negative aspects, what should be improved?*_____

2. **The content (information) of the e-course was appropriate to course achieve course goals**

*Explain positive and negative aspects, what should be improved, what information should be added?*_____

3. **The content (media, activities, interactive content) of e-course content was appropriate to achieve course goals and facilitate independent learning**

*Explain positive and negative aspects, what should be improved, what other interactions could be used?*_____

4. **The time management and balance (allocated for independent learning and online communication) was sufficient to reach learning outcomes.**

Explain positive and negative aspects, what should be improved e.g. which topics need more time online communication or independent learning?

_____

5. **Online collaboration was efficient to reach learning outcomes**

*Explain positive and negative aspects of online collaboration with teacher and other students, what should be improved?*_____

6. **Feedback was provided adequately**

*Explain positive and negative aspects of feedback from teacher or other students what should be improved?*_____

7. **Other suggestions to improve e-course**_____

Annex 6

SAMPLE OF METHODOLOGICAL GUIDELINES FOR PREPARATION, DESIGN AND IMPLEMENTATION OF E-COURSES

(as an example used at the State Border Guard College of Latvia)

I. General terms

1. Methodological instructions for the preparation, design and implementation of e-courses (hereinafter - the Instructions) determine the general requirements for the preparation, design and implementation of the content of formal and non-formal education programs of the State Border Guard College (hereinafter - the College) in the form of electronic learning.

II. Terms used

2. E-learning system - the College's e-learning implementation system based on the Moodle (modular object-oriented dynamic learning environment) learning management system.
3. E-course - the content of formal or non-formal education programs prepared for implementation or independent learning in the form of e-learning and specially structured.
4. E-course materials - study materials prepared by the e-course teacher (electronic documents and presentations, audio, video materials, images, online materials, tests, assignments, etc.), which are available in the College e-learning system.
5. E-course teacher - College lecturer / lecturer who develops and / or implements an e-course.
6. E-course learner - a listener of a formal or non-formal education program implemented in the form of e-learning, and a student or student of the College who independently acquires e-course study materials.
7. E-learning system administrator - a responsible official (employee) of the College, whose job description determines the operation of the e-learning system.

III. E-course preparation and design

8. The e-course teacher is responsible for the compliance of the e-course quality with the requirements specified in these Instructions.
9. The content of the e-course should enable the formal or non-formal education program to be effectively achieved through a variety of complementary textual, audio and visual formats and forms of communication.
10. When developing an e-course it should meet the following criteria:
    - 10.1. based on the content of the formal or non-formal education program, accordingly adapting it to the acquisition also in the form of self-study;
    - 10.2. observe the requirements of Clause 9 of these Instructions, as well as the "Conditions for the Development, Design, Review and Issuance of Teaching Aids" (hereinafter - the Conditions) approved by an order of the College;
    - 10.3. when inserting e-course materials containing restricted access information into the College's e-learning system, a remark "restricted information" shall be indicated next to the title or content;
    - 10.4. its content shall be structured sequentially so that it is easy to understand and review;
    - 10.5. The design of the e-course follows a uniform style.
    - 11. In the college e-learning system, a table of contents shall be created for the e-course, which shall include:

11.1. a description of the e-course;
11.2. an explanation of the terms, abbreviations and symbols used (as necessary); 11.3. the titles of sections and, where appropriate, subsections.

12. The description of the e-course shall include:
    12.1. the target audience of the e-course and, if necessary - prior knowledge or special skills for the acquisition of the e-course;
    12.2. the goals, tasks and results to be achieved of the e-course (what knowledge, skills, abilities and competencies the learner of the e-course will acquire or develop);
    12.3. the duration of the e-course, description of implementation, sequence of acquisition;
    12.4. final / mid-term examination, the content of the e-course must be accompanied by information about the examination, as well as the examination questions and / or a description of the practical task. Questions and task description should be formulated so that the e-course learner is able to independently prepare for the test;
    12.5. information about the e-course teacher: name, surname, academic / scientific degree, position, contact information (e-mail, telephone number and / or other communication tools);
    12.6. recommendations for learning the e-course, if necessary.
13. The e-course is divided into sections (for example, for one topic or one chapter for one week). The e-course section includes:
    13.1. the name;
    13.2. a short annotation of the department, indicating the learning outcomes to be achieved;
    13.3. the subject to be acquired;
    13.4. a list of used literature and information sources (it is recommended to divide into mandatory and recommended literature, if possible, to indicate specific pages, links, chapters, etc.);
    13.5. various examination or self-examination activities (tasks, exercises, tests, etc.) on the acquired material (can be given within or at the end of each chapter) with feedback (possibility to automatically see the correct answers, possibility to submit individual or group assignments for evaluation to the e-course teacher);
    13.6. final examinations or departmental subject material examination tests and precise instructions regarding the conditions for the performance thereof.
    13.7. opportunity to express an opinion, for example in a forum discussion (as appropriate).
14. The e-course acquisition time plan envisages that the e-course learner needs approximately five weeks for the acquisition of 40 hours (one credit point or 1 CP) of study materials, taking into account that in one week eight hours are provided for the e-course learner training: e– for the acquisition of the course subject, self-examination and examination works and communication with the e-course teacher.
15. E-course teacher, if necessary, in order to receive technical support in the development of the e-course:
    15.1. to create new user accounts, add users to the e-course, insert electronic materials into the e-learning system, you can contact the e-learning system administrator;
    15.2. for the creation, you can refer to (indicate specific person), whose job description specifies the provision of the creation / recording of video or audio materials.
16. The administrator of the e-learning system and the expert shall provide technical support to the e-course teacher upon request.

IV. E-course evaluation

17. After the development or updating of the e-course (including after improvements), the e-course teacher shall submit a report to the official of the College Department, who manages the work of the Department (hereinafter - the Head of the Department) on the need to evaluate the e-course.
18. Head of the Department:

18.1. determine three representatives of the department under its subordination for the evaluation of the e-course (hereinafter - the representatives appointed for the evaluation of the e-course);
18.2. if necessary, submit a report to the Deputy Director of the College (in study work) regarding the invitation of e-course evaluation specialists from other structural units of the College or the State Border Guard (hereinafter - Invited Representatives).

19. Representatives appointed for e-course evaluation, Invited representatives:
    19.1. evaluates the prepared e-course using the "E-course content and structure quality evaluation form" (appendix), and submits the e-course evaluation to the Head of the Department;
    19.2. during the evaluation of the e-course, the e-course teacher is invited (as necessary);
    19.3. The e-course evaluation provides a recommendation:
    19.3.1. to start the implementation of the e-course;
    or
    19.3.2. make improvements.
20. Head of the Department:
    20.1. the e-course teacher is introduced to the results of the e-course evaluation;
    20.2. approves the e-course and gives instructions for its implementation;
    20.3. gives instructions for improving the e-course, if necessary.
21. After making improvements, the relevant head of the Department shall determine the re-evaluation of the updated e-course. The re-evaluation takes place in Guideline IV. in accordance with the procedure laid down in Chapter.

V. Implementation of e-course

22. The e-course teacher integrates the approved one into the College's e-learning system. if necessary, receiving technical support from the e-learning system administrator.
23. The Education Coordination Department of the College or the e-course teacher shall provide the e-course learner contact information to the e-learning system administrator.
24. College e-learning system administrator:
    24.1. upon receipt of contact information about e-course learners, create access rights for them to the College e-learning system;
    24.2. inform the e-course teacher about the readiness of the e-course;
    24.3. send e-course learners information on granted access rights, available study support and instructions for using the College's e-learning system;
    24.4. provides technical support to the e-course teacher in the integration of the e-course into the e-learning system and implementation.
25. E-course teacher:
    25.1. in accordance with the conditions of the educational program, provide consultations to e-course learners by telephone, via e-mail or other communication tools or after agreement - in person;
    25.2. controls the acquisition of the e-course in accordance with the conditions of the educational program.

VI. Closing remarks

26. At the end of the e-course, the (Specific unit at your institution) shall conduct a survey of e-course learners in accordance with the procedures specified in the order of the College.
27. The e-course is updated by the e-course teacher, considering the results of the survey, as well as due to changes in formal or non-formal education programs.
28. In case there have been significant changes in the content or structure of the e-course, the e-course teacher shall inform the Head of the Department about the necessity to evaluate the e-course. The evaluation of the updated e-course takes place in Instructions IV. in accordance with the procedure laid down in Chapter.

References used during the development of guidelines

(in the order of appearance)

1. Glossary of Curriculum UNESCO International Bureau of Education UNESCO-IBE 2013 www.ibe.unesco.org
2. Analysis of the terminology used in the field of virtual learning https://www.researchgate.net/publication/220374372
3. http://www.gailruby.com/
4. Rosenberg, M. J. (2001). *e-Learning strategies for delivering knowledge in the digital age.* New York, NY: McGraw-Hill.
5. UNESCO, 2011. DIGITAL LITERACY IN EDUCATION Policy Brief https://unesdoc.unesco.org/ark:/48223/pf0000214485/PDF/214485eng.pdf.multi
6. https://elearning.fao.org/pluginfile.php/40426/mod_resource/content/1/FAO_elearning_guide_en.pdf
7. UNESCO ICT COMPETENCY STANDARDS FOR TEACHERS Published in 2008 by the United Nations Educational, Scientific and Cultural Organization 7, place de Fontenoy, 75352 PARIS 07 SP Composed and printed in the workshops of METIA
8. Steel S. (2014) *The Pursuit of wisdom and happiness education. Historical sources and contemplative practices.* Sunny Press New York, USA.
9. Literature Review on the Impact of Digital Technology on Learning and Teaching CHILDREN, EDUCATION AND SKILLS ISBN: 978-1-78544-819-5 Produced for the Scottish Government by APS Group Scotland PPDAS59781 (11/15) Published by the Scottish Government, November 2015 ICF Consulting Services Ltd November 2015
10. https://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/teacher/teachercomp_en.pdf
11. Social Research series. Scottish Government. Literature Review on the Impact of Digital Technology on Learning and Teaching CHILDREN, EDUCATION AND SKILLS ICF Consulting Services Ltd November, ISSN 2045 6964, 2015 The Scottish Government St Andrew's House Edinburgh, EH1 3DG
12. https://www.researchgate.net/publication/305713495_An_Instructional_Design_Framework_for_Fostering_Student_Engagement_in_Online_Learning_Environments#fullTextFileContent
13. https://www.hanoverresearch.com/
14. Fullan, M. (2013). Motion Leadership in Action. Thousand Oak, CA: Corwin Press; Toronto: Ontario Principals' Council
15. Beatrice Ghirardini, 2011. E-learning methodologies A guide for designing and developing e-learning courses. http://www.fao.org/3/i2516e/i2516e.pdf
16. https://docs.moodle.org/all/is/Pedagogy
17. MOODLE AND PEDAGOGY https://docs.moodle.org/310/en/Pedagogy
18. OECD (2018). The Future of Education and Skills. Education 2030. https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf
19. Yoram Eshet-Alkalai, 2004, Digital literacy: A conceptual framework for survival skills in the digital era, Journal of Educational Multimedia and Hypermedia, 13(1):93–106.
20. Aleksandra Čižmešija, Marina Diković, Vlatka Domović, Mina Đorđević, Renata Jukić, Ph.D. Svjetlana Kolić-Vehovec, Morana Koludrović, Jasminka Ledić,. Sanja Lončar-Vicković, Daliborka Luketić, Branko Matulić, Renata Šamo, Marko Turk, Vlasta Vizek Vidović, Katja Vojvodić, HANDBOOK FOR TEACHING COMPETENCE ENHANCEMENT IN HIGHER EDUCATION, Co-funded by the Erasmus + Programme of the European Union. Ministry of Science and Education of Croatien, ISBN: 978-953-8103-21-6, 2018
21. https://www.researchgate.net/publication/288671403_Development_of_Teacher_Competencies_in_a_New_Learning_Environment_in_Higher_Education
22. https://www.learnupon.com/blog/addie-5-steps/
23. https://elearninginfographics.com/the-addie-model-infographic/
24. https://www.ispringsolutions.com/blog/instructional-design-principles
25. https://files.eric.ed.gov/fulltext/EJ1154117.pdf
26. Yong Kim. Development of e-Competency Framework for e-Learning Instructional Designer Indian Journal of Science and Technology, *Vol 9(26), DOI: 10.17485/ijst/2016/v9i26/97318, July 2016*
27. Beatrice Ghirardini, 2011. E-learning methodologies A guide for designing and developing e-learning courses. http://www.fao.org/3/i2516e/i2516e.pdf
28. Angeliki, P., Asimina, M., Eleni B. (2005) When Instruction Meets Design: Embedding Instructional Theory Paper presented at the International Association for Education and Training, Rome, Italy. Downloaded from www.dis.uniroma1.it/~lhci/018.pdf

29. https://www.uky.edu/ukonline/sites/www.uky.edu.ukonline/files/DL%20Netiquette.pdf
30. https://childmind.org/article/managing-students-behavior-during-remote-or-hybrid-learning/
31. http://www.ednewsdaily.com/5-ways-to-manage-behavior-in-an-online-classroom/
32. https://www.edutopia.org/article/5-research-backed-tips-improve-your-online-teaching-presence
33. https://theconversation.com/coronavirus-14-simple-tips-for-better-online-teaching-133573
34. http://www.laea.lv/UserFiles/File/publikacijas/MQ-A5%20anglju%20val.pdf

List of Project related publications

1. Spridzāns M. Pavlovičs J. Soboļeva (2020) D. *Possibilities of developing interactive e-learning system for border guards training in the State Border Guard College of the Republic of Latvia.* VOL 3, NO 8 Pages 45-53 http://dx.doi.org/10.17770/bsm.v3i8.5358
2. Spridzāns, M., Dzerviniks, J. (2020). *Theoretical and practical aspects of educators' digital competence development in militarised education institution.* EDULEARN20 Proceedings. Pages: 2732-2738, d**oi:** 10.21125/edulearn.2020.0828
3. Spridzāns, M., Dzerviniks, J. (2020) *Peculiarities of developing e-learning systems in militarised education institution.* EDULEARN20 Proceedings. Pages: 2710-2715, d**oi:** 10.21125/edulearn.2020.0828
4. Spridzāns, M., Dzerviniks, J. (2020) *Docētāju digitālās kompetences attīstības un novērtēšanas teorētiskie un praktiskie aspekti militarizētā izglītības iestādē.* Proceedings of the International Scientific Conference. Volume IV, May 22th -23th, 2020. 646-656.
5. Spridzāns, M. (2019). *Lecturer's Role in Design and Implementation of E-learning Process*. Valodu apguve: problēmas un perspektīva: zinātnisko rakstu krājums. XVI [16] (ISSN: 1407-9739) https://dom.lndb.lv/data/obj/842150, (Researchgate, EBSCO) DOI: 10.37384/VA.2020.16.287, 287.-289.lpp.
6. Spridzāns, M., Dzerviniks, J. (2019). *Pedagogu digitālās kompetences pilnveides aktualitāte*. Starptautiskajā zinātniskās konferenes „Sabiedrība, izglītība, integrācija", Rēzeknes Tehnoloģiju akadēmija rakstu krājums. DOI: http://dx.doi.org/10.17770/sie2019vol5.3839, 513.-525.lpp.
7. Gaveika, A., Spridzans, M. (2019) *The role of Frontex Agency in border guards training to ensure the common approach of the EU external borders security.* Journal of International Economic Research JIER, ISSN 2500-9656, EBSCO indexing. Pieejams: https://irissymposium.wixsite.com/website-1
8. Spridzāns, M. (2018). Peculiarities of teachers and students' interaction in e-learning environment. VII International scientific and practical conference "Border security and management", proceedings. ISSN 2592-849X, DOI: 10.17770/bsm.v2i7.3479 http://journals.rta.lv/index.php/BSMhttp://journals.rta.lv/index.php/BSM/issue/view/68/showToc, 144. -154.lpp.

Acknowledgments

On behalf of the Project team we hereby express our sincere gratitude to the State Education Development Agency of the Republic of Latvia, to administration of State Border Guard College of the Republic of Latvia, Border Guard School at the State Border Guard Service under the Ministry of the Interior of the Republic of Lithuania, Border and Coast Guard Academy of Finland, Estonian Academy of Security Sciences for constant support in Project management and implementation activities.
We really hope our common collaboration results will facilitate improvement of e-learning systems, raise discussions and initiate new projects and joint researches to enhance our education and security.