BELL
Lifelong Learning

Proceedings of the final conference
on the Erasmus+ project

ENHANCEMENT OF LIFELONG LEARNING IN BELARUS

БрГТУ

Сборник статей
итоговой конференции
по проекту Эразмус+

СОВЕРШЕНСТВОВАНИЕ НЕПРЕРЫВНОГО ОБРАЗОВАНИЯ В РЕСПУБЛИКЕ БЕЛАРУСЬ

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В сборнике представлены научно-методические статьи, подготовленные участниками итоговой конференции по проекту Эразмус+ «Совершенствование непрерывного образования в Республике Беларусь». В статьях рассмотрены вопросы теории и практики дистанционного образования, проектирование содержания учебных курсов, а также применения информационно-коммуникационных образовательных технологий в современной высшей школе.

Сборник может быть использован научными работниками, преподавателями, студентами, магистрантами и аспирантами высших учебных заведений, специалистами системы высшего образования.

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Dear colleagues!

We now live in a constantly changing, dynamic world that makes very serious demands on the quality and content of education. The faster and more efficiently we respond to those demands by offering new study programmes, the wider is the audience that we can attract to Lifelong Learning, the more attractive and competitive Belarusian universities will become. You are holding in your hands a collection of research, review, and methodology articles of the final conference on the Erasmus+ project "Enhancing Lifelong Learning Education in Belarus". The work on the project started in 2017 by a wide consortium representing higher education institutions in all regions in Belarus and universities in Latvia, the United Kingdom, Sweden, and Spain. For three years, a lot of experience has been gained in developing new online courses, from learning design to the selection of criteria for assessing knowledge and skills of students. The courses themselves have been successfully tested with a wide audience representing different social and age groups. The practical skills gained during the implementation of the project, as well as the experience of organising blended learning, using ICT-based educational technologies, will undoubtedly be of interest to a wide range of practicing teachers, managerial and administrative staff responsible for running the educational process. This conference book represents a collection contributed by different authors representing not only the partner universities inside the project consortium but also other higher education institutions, which are also moving in the same direction of enhancing methods and technologies of teaching and learning.

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BELL ERASMUS+ CAPACITY-BUILDING PROJECT: IMPLEMENTATION OF INNOVATIVE PRACTICES IN LIFELONG LEARNING IN BELARUS

One of the main goals of the Erasmus+ programme is to "foster quality improvements, innovation excellence and internationalisation at the level of education institutions" (European Parliament and Council, 2013). The programme's capacity-building module (CBHE) has as its objective enhancement of "the international dimension of education, in particular through cooperation between [the European] Union and partner-country institutions in the field of higher education through targeted capacity-building in Partner Countries" (European Parliament and Council, 2013). Altogether this means that the Erasmus+ programme provides opportunities for higher education institutions from eligible Partner Countries, including Belarus, for cooperative enhancement of quality of higher education and improving the level of skills at universities through introducing new approaches, methods, and technologies of education.

Recently it has become evident that not only formal education (general, vocational and higher), but also additional skills and knowledge

acquired outside formal education have become of paramount importance. Lifelong learning inside regional communities plays an important role in the development of informal education. In addition, according to the initiatives of the Bologna Process, higher education institutions play a significant role in lifelong learning, since lifelong learning has become the leading paradigm for debating the quality of education systems and carrying out their reforms (UNESCO Rethinking Education Towards a global common good, 2015). Higher education institutions have a key role to play in transferring knowledge and strengthening regions, and the lifelong learning process "must improve access to quality educational opportunities for adults at all stages of their lives, regardless of gender and personal or family circumstances, in order to promote their individual and professional development, empowerment, adaptability, employment and active participation in society"(Proposal for a COUNCIL RECOMMENDATION on Key Competences for Lifelong Learning, 2018). In addition, lifelong learning is one of the key factors in meeting the needs of the changing labour market. Therefore, it is important that employers understand that adult learning is an important factor in promoting employment opportunities and mobility in the labour market. That said, in joint cooperation between universities and enterprises, it is necessary to expand opportunities for the continuous development of competencies and strengthening lifelong learning. Another equally important factor is the modernization of education and application of innovative methodological approaches for various target groups of students.

In modern education systems, digital means play a significant role, including the introduction of online learning tools. Needs and opportunities of distance learning are specifically reflected in situations in which different external circumstances can affect and even limit the possibilities for free access to full-time education. The BELL project of the Erasmus+ Capacity Building in Higher Education programme aims to enhance lifelong learning education in Belarus with effective use of distance learning and Bologna instruments through the collaborative de-

velopment of five distance and online education courses applying the European Union (EU) partners' best practices in the domain of student-centred learning design.

The issues of integration and international collaboration in the field of education, the exchange of experience in the creation and modelling of training courses using the latest achievements of pedagogy, the widespread use of IT-based distance technologies in the educational process are currently relevant for higher educational institutions in the EU and Belarus. Therefore, in 2015, the idea was born to combine the experience of EU universities in developing and delivering training courses using IT-based distance technologies and to organize such courses at the Continuing/Lifelong Learning Education Institutes at universities in Belarus. It was decided to invite regional universities to participate in the project which was named "Enhancement of Lifelong Learning in Belarus" and was financially supported by the European Commission.

The choice of the project participants from the Belarusian side is justified by the situation in the regions, where, in contrast to the capital city, it is more difficult to get a job in a specialty, a small number of professional courses allowing to undergo retraining, etc. EU participants are also regional higher education institutions that have similar problems and experience in solving these problems, which has brought in additional values to the project by showing importance of lifelong learning for supporting lifelong learning and labour market in regions.

Ten higher educational institutions from five European countries have taken part in the project. Four of the ten partners are from four different countries of the European Union:

1. Project coordinator — Rezekne Technological Academy (Rezekne, Latvia);
2. The Open University (Milton Keynes, United Kingdom);
3. Linnaeus University (Växjö, Sweden);
4. Cadiz University (Spain).

Six Belarusian partner universities represent five different regions in the country:

1. National coordinator — Polotsk State University;
2. Belarusian State Agricultural Academy;
3. Brest State Technical University;
4. Vitebsk State University named after P.M. Masherov;
5. Gomel State Technical University named after P.O. Sukhoi;
6. Yanka Kupala State University of Grodno.

To achieve the goal of the project, which is to enhance lifelong learning in Belarus with the effective use of online education and blended learning and the tools of the Bologna Process for the development of the regional labour market, the project has fulfilled the following tasks:

1. Integration of six regional distance learning universities into the inter-university network for lifelong learning;
2. Training teachers and management staff of the Continuing Education Institutes at the six Belarusian universities in the best practices of the EU partner universities;
3. Development and testing five new online (blended) training courses for the public; improve them upon completion of training;
4. Approval of the five new training courses by the university councils of the six partner universities in Belarus;
5. Raising awareness of the regional communities about the project, increase its visibility and dissemination of its project.

The study of the needs of the population in educational programs of continuing education for adults made it possible to identify five most popular areas (English, financial literacy and entrepreneurship, legal literacy, computer literacy, energy and resource saving). Thus, five subject alliances were formed to build up the planned inter-university network including all six Belarusian partner universities in the following areas:

1. English (responsible: Institute for Continuing Education at Yanka Kupala State University of Grodno);
2. Financial literacy and entrepreneurship (responsible: Vitebsk State University named after P.M. Masherov);

3. Legal literacy (responsible: Belarusian State Agricultural Academy);
4. Computer literacy (responsible: Brest State Technical University);
5. Energy and resource saving (responsible: Gomel State Technical University named after P.O. Sukhoi).

As it is the main objective in any capacity-building project of the Erasmus+ programme to share and adapt best practices that are used at EU higher education institutions by partner country universities, a number of fruitful study visits were organized for teaching and managerial staff of the Institutes of Continuing Education at the six Belarusian partner universities. Each visit was dedicated to a separate important and up-to-date educational innovation, didactics and technologies.

The study visit to Rezekne Technological Academy in Latvia was aimed at sharing and adapting the technological issues and didactics of using VLEs in education on the example of the MOODLE platform. The study visit to the Open University in the United Kingdom helped the Belarusian colleagues to train skills of learning design on online courses using the MOODLE platform. At Cadiz University in Spain the Belarusian teaching learnt technological methods, tools and online resources to form up the course contents of online courses. Colleagues of the Linnaeus University in Sweden organized practical sessions and workshops for Belarusian staff where they were immersed in the study process combining e- and b-learning modes.

The development strategy in the project was to adapt the EU partners' experiences to the Belarusian educational reality and develop curricula and teaching materials for the five training courses. Due to the close interaction between the EU and Belarusian partners in the process of development of training courses in the form of discussions of the contents, teaching and learning methods and technologies before the launch of the courses for the regional communities, in the form of monitoring the running pilot courses and discussing the positive aspects as well as aspects that had to be improved, the development of the five courses was a continuous process at the stages of course design and piloting.

The implemented continuous Quality Assurance process allowed to verify and make changes in the curricula, design and contents of the courses. Different questionnaires and interviews with students triggered analysis of the problems and good practices used in the five courses which helped to make updates in the five courses' design and contents as well as in the approaches to motivating students in their learning, stimulating their further interest in the course leading them to complete the courses successfully, and decreasing the students' drop-out. The EU partners' and the external evaluator's active involvement in the advice for and evaluation of the courses' development and implementation effectively secured the high level of the academic advancements on the courses and their management within the inter-university network.

Another very important impact of the project, which has actually become an added value in the project, that was built due to the employment of the EU partners' best practices, is introduction of collaborative development of and responsibilities for the delivery of the five b-learning courses into the academic culture in Belarus. The practice was not easy to be effectively elaborated and carried out since in the Belarusian educational reality development of courses is a single-person responsibility and there is little cooperation within academic departments, between academic departments and between different higher education institutions. The effect of the collaborative development and delivery of the five courses showed their progressive character and longstanding impact on different target groups and stakeholders.

Finally, regular follow-up activities and the additional, second, piloting of the developed five courses, which was not originally promised in the project, have fixed and secured the high-quality delivery of the courses and effective collaboration of the teaching and managerial staff that are involved in the delivery and further updates of the courses.

All the results of the project — the inter-university network uniting attempts of continuing education at the six Belarusian partner universities, the five b-learning courses, didactic approaches, methods and technologies of education used in the delivery of the online courses — will

continue to be exploited after the end of the project. Some Belarusian partner institutions have already made plans of extending the developments achieved within the project to other academic subjects at the level of continuing (lifelong learning) education and to the other academic levels — bachelor and master.

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EVALUATING THE IMPACT OF THE LEARNING DESIGN AND COURSE CREATION (LDCC) WORKSHOP ON THE PARTICIPANTS OF THE ENHANCEMENT OF LIFELONG LEARNING IN BELARUS (BELL) PROJECT

Abstract

Recently, national governments have introduced limitations on traditional approaches to curriculum delivery to cope with the impact of COVID-19. Higher Education Institutions (HEIs) have had to scramble to adjust their teaching and learning models in order to 'pivot online'. As such, there is a pressing need for professional development of staff to deliver learning at a distance, based on robust distance and online education design frameworks. One such professional development offering is the LDCC Workshop from the Open University UK (UKOU) which, in September 2018, was attended by staff from six Belarusian HEIs involved in the ERASMUS+ funded Enhancement of Lifelong Learning in Belarus (BELL) Project. The Belarusian project partners were tasked with developing and delivering five distance and online courses for the first time in Belarus. The 18-month longitudinal study presented here evalu-

ated the impact of the LDCC Workshop on the working practices of the participants and the design and realisation of their courses.

Context

The Learning Design and Course Creation (LDCC) Workshop allows staff from the UKOU to engage with the professional development of academics and student support workers in other HEIs through workshops derived from current practice at the UKOU. It provides participants with an experience which mirrors as closely as possible the experience of a multi-disciplinary team tasked with creating and producing a new online course at the UKOU, although within a narrower timespan. It has been designed to promote student-focused design and to model the learning design principles of:

- encouraging design conversations and collaboration in design;
- using tools, instruments and activities to describe and share designs;
- developing data and learning analytics to support and guide decision-making (Galley, 2015).

In the BELL Project LDCC Workshop the participants were organised into teams of five and worked together through a programme of activities. Each team decided on their course subject area, duration and level, allocated roles and responsibilities to one another (in line with self-declared discipline expertise, skills, interests and competencies that they perceived as important) and developed a vision statement for their course using the free, online 'learning design wordwheel' (Openlearn, 2016; Olney, Rienties & Toetenel, 2019). The participants then considered the particular needs, characteristics and learning preferences of their hypothetical students by creating one or more student profiles. Once completed, they were supported in the process of generating learning outcomes, learning activities and assessment tasks in accordance with constructive alignment principles (Biggs, 1996). The iterative design cycle process was then visualised and structured using the Activity Types Classification Framework incorporating the allocation of anticipated student workload (Conole, 2013; Olney, Rienties & Toetenel, 2019).

Participants were then given access to their own VLE website with an initial layout of three to five weeks' worth of study. They worked together to transfer their design online and to see it come to life on the bespoke Moodle-based UKOU Virtual Learning Environment (VLE). The participants were encouraged to reflect on both the hypothetical student experience — and their own — through a number of inbuilt reflective activities which included a final presentation to their peers.

Data collection

Data was gathered from LDCC Workshop participants using 3 instruments which are summarised below:

Instrument	Question type	Question focus	No. of respondents	When
A (written)	Likert Free text	1. How easy/difficult is LDCC to implement? 2. What would need to change to implement LDCC?	18	September 2018
B (online)	Likert Multiple choice	1. Four questions on perceptions of 'helpfulness', 'ease of use', 'how used' and 'intention to use' for LDCC activities. 2. What would need to change to implement LDCC?	19	March 2020
C (online qualitative)	Semi-structured interview	Reflections on how the LDCC activities had been used in BELL course design, in other course design, and intentions for the future. Reflections on findings from instruments A & B.	9	April 2020

Results

Instrument A

12 of the 18 respondents (67%) considered implementing the OU approach to be either 'difficult' or 'very difficult'.

The content analysis of the free text responses suggested that the respondents considered management/structural/policy/leadership and organisational 'system' change (n=7) to be the most important thing that would need to change, followed by technical/platform/website and IT 'system' change (n=4), and 'establishing and operating teams' (n=3).

Instrument B

Responses to the first four questions in Instrument B are summarised in Figures 1–4 below.

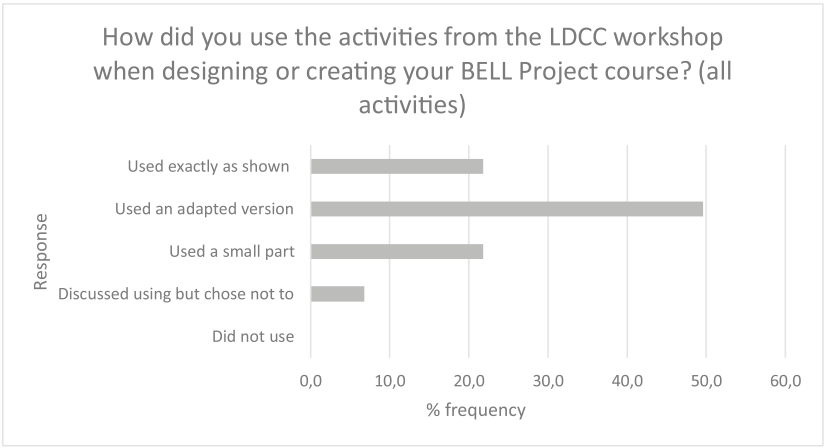

Figure 1 — *Collated responses to Question 1, Instrument B*

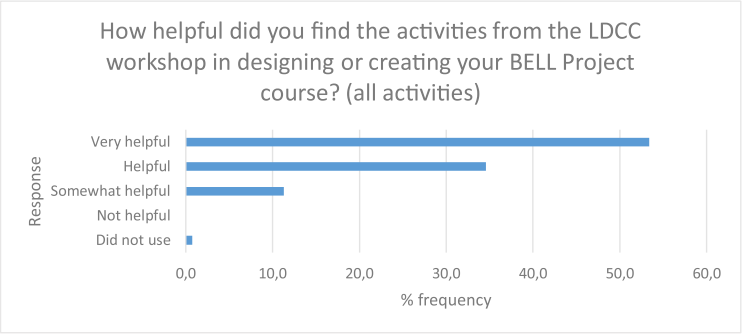

Figure 2 — *Collated responses to Question 2, Instrument B*

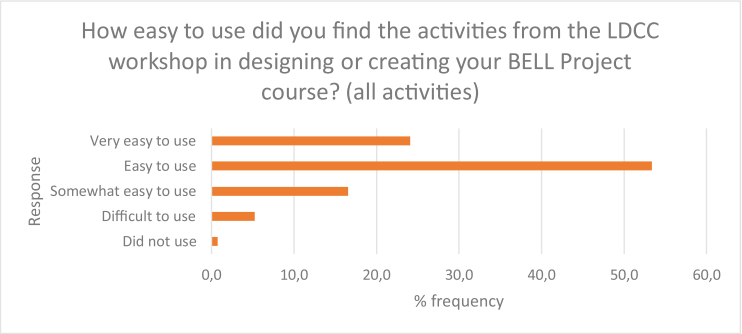

Figure 3 — *Collated responses to Question 3, Instrument B*

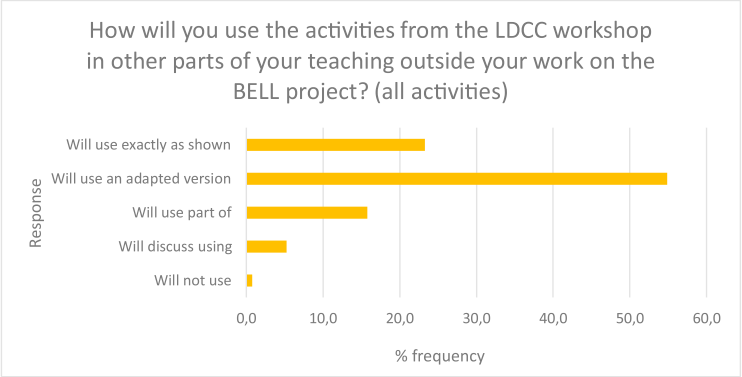

Figure 4 — *Collated responses to Question 4, Instrument B*

A comparison of the use of the individual activities by the BELL participants is shown in Figure 5 below:

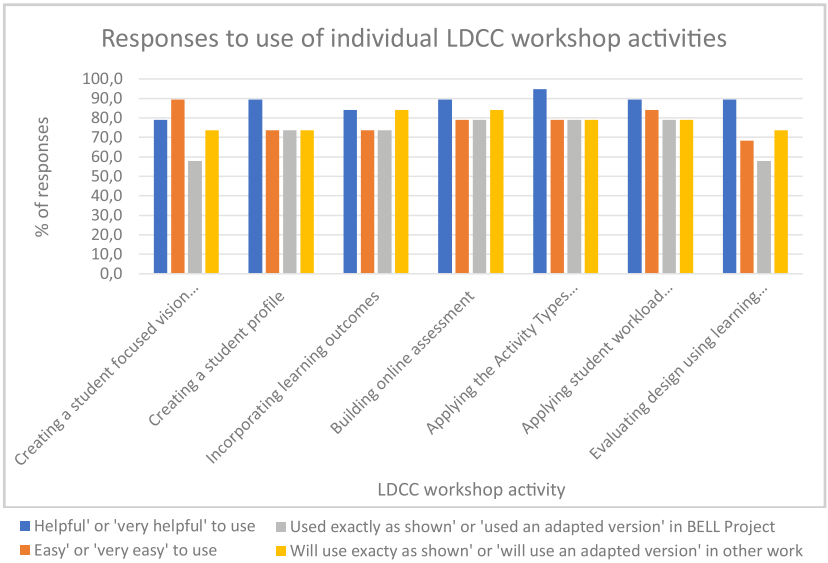

Figure 5 — *Comparison of the use of the individual workshop activities*

When responding in Instrument B for the second time to the question previously asked in Instrument A, the respondents still considered management/structural/policy/leadership and organisational 'system' change (n=8) to be the most important thing that would need to change, followed by technical/platform/website and IT 'system' change (n=3), and 'establishing and operating teams' (n=3). These results were very similar to the responses from Instrument A.

Instrument C

When asked at interview the general reactions offered by the respondents (anonymised and referred to by the numbers in square brackets) to the LDCC Workshop were very positive. For example, respondents described their experience as, 'very fruitful' *(06)*, 'very useful' *(07)*, and,

making 'changes in our way of thinking in our minds' *(08)*. One respondent went so far as to describe their reaction to the workshop as like the, 'discovery of a new continent by Columbus' *(02)* due to the way it introduced approaches that could lead to design being 'done in a completely different way' *(02)*.

The student profile activity appeared to particularly resonate with the respondents as a way to focus in on matching design decisions with prospective students' needs and motivations *(01, 13, 14)* in the design of their BELL courses. Several also referred to using the Activity Types Classification Framework to structure their learning designs in their BELL courses *(01, 07, 10)* and was, for one respondent at least, 'my best experience of the OU' *(14)*.

Instrument A responses indicated that immediately after the LDCC workshop 12 of the 18 respondents (66%) considered implementing the OU approaches would be either 'difficult' or 'very difficult'. However, on reflection, after the modules were designed and delivered, those interviewed considered implementing the LDCC approaches to be much easier than originally perceived. Several respondents pointed out that once they started with the work and faced the practical necessities of the challenge any big concerns about difficulties were dealt with successfully *(01, 06, 10, 14)*. On completion, some respondents commented that they actually found the approaches 'easy to adapt' *(19)* or unproblematic because they were similar to what they may have 'usually used by initiative' *(02)*. In fact, responses to *Q3, Instrument B* suggested that after using experientially around three quarters of the respondents now considered the LDCC activities either 'easy' or 'very easy' to use.

Both *Instrument A* and *Instrument B* found that management/structural/policy/leadership and organisational 'system' change was considered the most important thing that would need to be adopted in order to introduce the LDCC design approach more widely into the relevant HEI. For one respondent the key difficulty was clearly found in 'inappropriate organisational structure and regulations' *(19)*. However, when asked to interpret this finding, other respondents pointed out that it was

not the aim of either themselves or the BELL project to 'spread it [online education] all over the university' *(02)* and there was 'no possibility to make some dramatic changes' *(08)* but better to focus on small developments. Whilst they considered their experience a valuable starting point there was also positivity that the development of their module would make their HEI 'noticeable' *(13)*, able to take advantage of a more general 'digitisation of economy and education' *(13)* and should be considered as showing 'positive results to use on-line education in our country' *(14)*.

Conclusion and Further Work

The results suggest that on the whole the LDCC Workshop was well received by the participants and the content was very applicable to their context. The LDCC Workshop was not specifically designed for use with Belarusian HEIs (it was developed for Chinese audiences), but this does not seem to have been detrimental. The evidence presented here points strongly to the conclusion that the LDCC Workshop could be utilised effectively as a professional development activity to support other HEIs wishing to 'pivot' online.

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HOW MIGHT THE CULTURAL LEARNING PREFERENCES OF THE PARTICIPANTS OF THE ENHANCEMENT OF LIFELONG LEARNING IN BELARUS (BELL) PROJECT IMPACT ON THEIR LEARNING DESIGNS?

Abstract

Like many other elements of education, the activity of creating learning is influenced to some degree by ways of thinking and behaving that are developed over time as part of an individual's exposure to social groups, media, history and geographical location. In other words, their *culture*. For some researchers — given a large enough data set — it is even possible to define national cultural characteristics and examine their role in fields such as international commerce and relations. Learning design places particular importance on the identification of student and environmental characteristics but little has been done to explore the impact of the cultural preferences of the learning designer on the learning situation that they create. In September 2018, the Learning Design and Course Creation (LDCC) Workshop from the Open University UK (UKOU) was attended by staff from six Belarusian HEIs in-

volved in the ERASMUS+ funded Enhancement of Lifelong Learning in Belarus (BELL) Project. The Belarusian project partners were tasked with developing and delivering five distance and online courses for the first time in Belarus. The Cultural Dimensions of Learning Framework (CDLF) was used to collect data on the cultural learning preferences of the BELL participants and the findings are presented here as a stimulus for discussion and potential comparison against the final course designs.

Context

The CDLF (Parrish & Linder-VanBerschot, 2010a) has been adapted from the work of many other researchers. It identifies eight dimensions and presents them as spectrums along which designers and learners can position themselves to help articulate their cultural learning preferences. Rather than simply observing cultural *practices*, which can be rather superficial, the CDLF attempts to uncover cultural *values* that are harder to identify but may give rise to those observable practices.

The ongoing work of Gert Hofstede in developing Hofstede's Cultural Dimensions (Hofstede, 2011) is also an important reference. He goes so far as to assign matrix scores for many countries to his six dimensions (of which three are closely incorporated into the CDLF). For those interested, these matrix scores are available at https://www.hofstede-insights.com/product/compare-countries/ for countries neighbouring Belarus, such as Latvia, Lithuania, Poland and Russia, whilst scores for Belarus and Ukraine are estimated.

Comparisons and interpretations with the results in this paper should of course be treated with care since the BELL participant group is statistically small and unlikely to be representative of the country as a whole. However, it is plausible that Hofstede's matrix scores might provide a useful mechanism for wider discussions about the role of cultural values in higher education.

Data Collection

BELL participants were invited to answer 20 questions across five dimensions of the Culturally Based Learning Preferences survey. The full survey of 30 questions across eight dimensions is available online (Parrish & Linder-VanBerschot, 2010b) but was adapted for this study to only include those deemed by the researchers to be most relevant to design situations. In the survey respondents were provided with two oppositional statements and were asked to indicate on a scale of 1–10 the extent to which they agreed with either of them, as demonstrated by the example below:

Class discussions are critical for learning	1 2 3 4 5 6 7 8 9 10	Students should observe in class and not interact unless asked to do so.

In the example, selecting 3 would indicate that the left-hand statement describes the opinion of the respondent best, but only to a moderate degree, whilst selecting 10 would indicate strong agreement with the right-hand statement. 19 participants responded to the survey.

Box and whisker plots are presented below in Figures 1–5, which show the range of views held on each of the questions and dimensions. In accordance with the instructions for interpreting the results (Parrish & Linder-VanBerschot, 2010c). the scores for each dimension were added together and then averaged. The resulting median number gives an indication of the group's cultural learning preference. Tables 1–5 show this data together with the interpretation suggested by the designers of the CDLF (Parrish & Linder-VanBerschot, 2010a).

Dimension 1 — *equality & authority:* How is inequality handled? How is status demonstrated and respect given? What interactions are appropriate for those of unequal status?

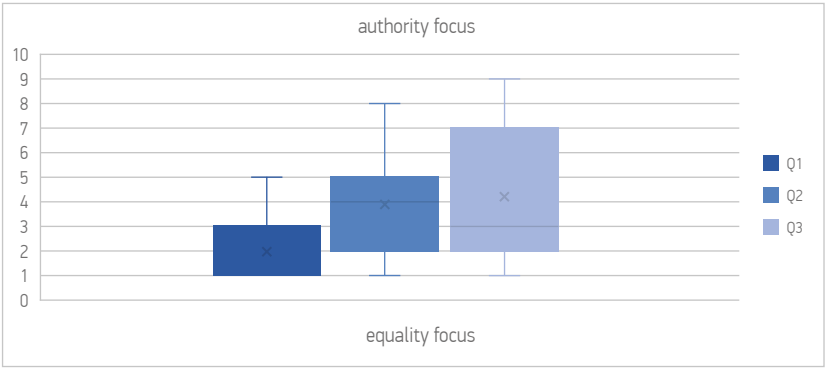

Figure 1 — *range of responses to Questions 1, 2 & 3 in Dimension 1: Equality & Authority*

Table 1 — *average score derived from Questions 1, 2 & 3 and relevant interpretation of Dimension 1: equality & authority*

Dimension	Average score/10	Interpre-tation	Manifestation in learning situations
Equality & authority	3.4	Equality focus	Teachers treated as equals to be engaged and even challenged. Students take responsibility for learning activities. Dialogue and discussion are critical learning activities.

Dimension 2 — *individualism & collectivism:* Which prevails, the interests of the individual or the interest of the group? To what degree are interpersonal relationships valued?

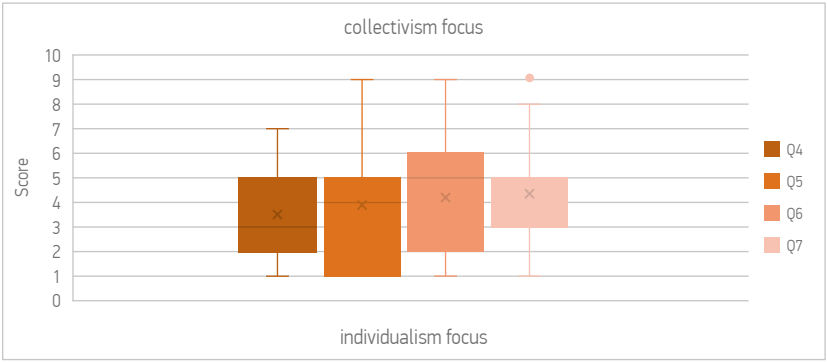

Figure 2 — *range of responses to Questions 4, 5, 6 & 7 in Dimension 2: Collectivism & Individualism*

Table 2 — *average score derived from Questions 4, 5, 6 & 7 and relevant interpretation of Dimension 2: individualism & collectivism*

Dimension	Average score/10	Interpretation	Manifestation in learning situations
Individualism & collectivism	4.0	Moderate individualism focus	Expectation that students speak up. Learning how to learn (cognitive skill) is primary (individual growth). Expressions of student's point of view is valuable component of learning. Hard work is motivated by individual gain.

Dimension 3 — *uncertainty acceptance & stability seeking:* How is uncertainty dealt with? Is it avoided or accepted? Is structure assumed more important than flexibility? What is the status of knowledge — established or in a process of development?

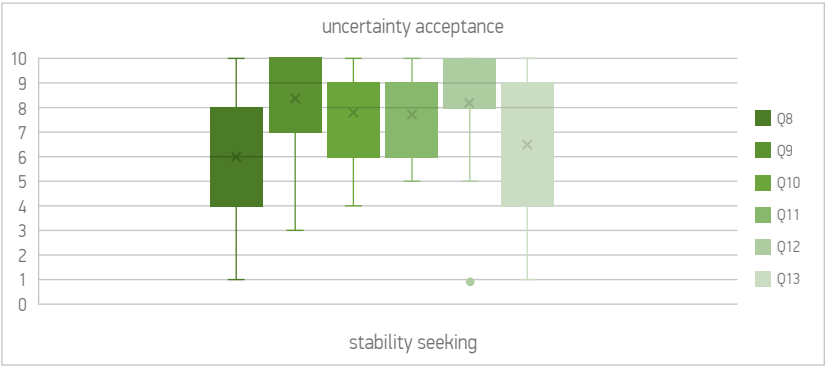

Figure 3 — *range of responses to Questions 8, 9, 10, 11, 12 & 13 in Dimension 3: uncertainty acceptance & stability seeking*

Table 3 — *average score derived from Questions 8, 9, 10, 11, 12 & 13 and relevant interpretation of Dimension 3: stability seeking & uncertainty acceptance*

Dimension	Average score/10	Interpretation	Manifestation in learning situations
Stability seeking & uncertainty acceptance	7.4	Moderate uncertainty acceptance focus	Learning activities are more open-ended. Focus on process and justified opinions. Ambiguity is a natural condition. Teachers can say 'I don't know'. Many resources used. Demonstrated ability to think is the key to academic success, not right answers.

Dimension 4 — *clock focus & event focus:* Do people conform to an external measure of time, or do they allow the event at hand to unfold in its own time? Which are more important, deadlines or relationships?

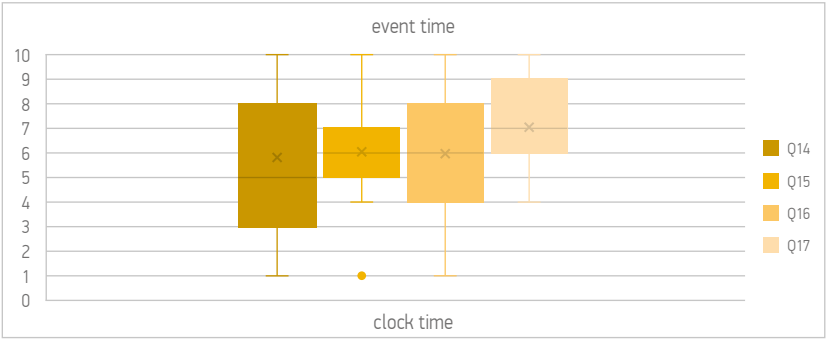

Figure 4 — *range of responses to Questions 14, 15, 16 & 17 in Dimension 4: clock focus & event focus*

Table 4 — *average score derived from Questions 14, 15, 16 & 17 and relevant interpretation of Dimension 4: clock time & event time*

Dimension	Average score/10	Interpre-tation	Manifestation in learning situations
Clock time & event time	6.2	Very small event focus	Instructional activities are allowed to continue as long as they are useful. Boundaries between class and outside class time are more fluid. Work continues towards improvements with less regard for deadlines. Willing to bypass procedures. Learners are talkative and expressive and may ignore plans.

Dimension 5 — *linear time & cyclical time:* Do people see time as a path and see goals as necessary destinations, or do they see time as a pattern of interlocking cycles into which they step in and out over the course of a life?

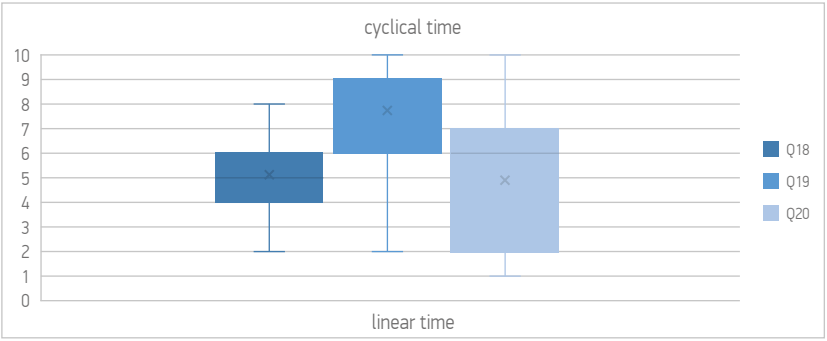

Figure 5 — *results from Questions 18, 19 & 20 in Dimension 5: linear time & cyclical time*

Table 5 — *average score derived from Questions 18, 19 & 20 and relevant interpretation of Dimension 5: linear time & cyclical time*

Dimension	Average score/10	Interpretation	Manifestation in learning situations
Linear time & cyclical time	5.9	Very small cyclical time focus	One adapts to time Learning is seen as practice toward slowly increasing perfection. Goals are secondary, one adapts to the situation to draw from it as much as possible. Time exists for observation and reflection. Rushing is counter-productive to achievement. Opportunities recur. The past is influential since cycles repeat. Repetition is valuable for learning.

Conclusion and Further Work

The authors of the CDLF specifically point out that their intention in developing the survey tool and framework was to 'stress the spectrums of variability' within any group of learners, rather than the 'generalised differences between cultures' (Parrish & Linder-VanBerschot, 2010a, p. 6). The results above seem to support this assertion, since although certain questions do seem to indicate a group-wide cultural learning preference they also demonstrate a wide variety of values being held within each dimension and the group as a whole. Very few of the questions were answered within a narrow range.

Participants in the BELL Project have been engaging with the work of universities in several different parts of Europe. They have been filtering and adapting learning design approaches through their own cultural lenses and applying them to create culturally unique examples of learning. It is envisaged that the results of this survey could offer a springboard to further work in trying to establish what role culture has played in the manifestation of the learning situations created by the BELL Project participants.

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PARTICIPATION OF BREST STATE TECHNICAL UNIVERSITY IN EDUCATIONAL PROJECTS AS AN ELEMENT OF THE INTERNATIONALIZATION STRATEGY

Rapid globalization gives rise not only to new economic dynamics but also to formation of a new model of relationships in the society, and that these in turn have consequences for national education system in many countries. Open nature of educational services market means for belarusian universities ample opportunities associated, for example, with wide academic mobility and the establishment of uniform quality management systems, and also the need for effective functioning in a new highly competitive educational environment [1].

The international activities of universities have undergone significant changes over the last years. It is currently being implemented in very diverse and rather complex forms and variations. The concept and strategy that is now known as the *internationalization of higher education* is a relatively recent phenomenon, less than 30 years old [2–3]. Knight (1993) defined the internationalization of higher education as the integration of intercultural and international elements into university teaching and research processes [4]. Today, the concept of

internationalization of higher education has expanded significantly. First of all, it means the construction of a genuinely international higher education community, increased quality and attractiveness, export of expertise, support for a multicultural society and the promotion of global responsibility [5].

At Brest State Technical University (BrSTU), the internationalization of education is seen as an integral part of the overall development strategy of the university. The basic principles of the development of the international activity of the university, its goals and objectives are represented in two basic documents:

1) Development Program of Brest State Technical University for 2020 (reviewed and approved by the University Council);
2) Development strategy of the Brest State Technical University for the period 2020–2025 (approved by the rector of the university).

According to these documents, the internationalization of education at the university includes the following:

— Positioning of BrSTU on the global educational services market as a significant regional university providing quality education in the field of civil engineering, architecture, engineering systems, mechanical engineering, electronics, information technology, economics and environmental protection;
— Providing a high level of education for the international students at BrSTU in order to increase the international prestige of the Belarusian higher school due to the possibility of building an individual study plan for each student as well as the widespread use of modern pedagogical technologies and methods of distance learning;
— An increase in the number of foreign students at BrSTU due to the active advertising campaign including participation in educational exhibitions abroad, expansion of the university's presence in global and regional rankings, the functioning of a multilingual version of the site, targeted work in social networks, preparation of advertising and information materials;

— Development of double educational programs on the first and second stage of higher education (bachelor and master degrees);
— Participation of the university in international educational projects (including Erasmus+ projects) for the development of academic mobility of students and teachers as well as for the implementation of institutional changes at the university in order to adapt the best pedagogical practices, rationalize the management structure and increase student satisfaction with the quality of education.

It should be noted that the university takes an active part in international project activities. From 2013 to the present, BrSTU has participated in 11 Tempus and Erasmus+ projects (Table 1).

Table 1 — *List of projects of Tempus and Erasmus programs in which Brest State Technical University took part*

Title of the Project	Reference number
Be-Safe — Belarusian Road Safety Network	544181-TEMPUS-1-2013-1-IT-TEMPUS-JPCR
CERES — Centers of Excellence for young RESearchers	544137-TEMPUS-1-2013-1-SK-TEMPUS-JPHES
RETHINK — Reform of Education Thru International Knowledge exchange	544178-TEMPUS-1-2013-1-PT-TEMPUS-JPCR
LNSS — Library Network Support Services: Modernizing libraries in Armenia, Moldova and Belarus through library staff development and reforming library services	561633-EPP-1-2015-1-AM-EPPKA2-CBHE-JP
InnoCENS — Enhancing Innovation Competences and Entrepreneurial Skills in engineering education	573965-EPP-1-2016-1-SE-EPPKA2-CBHE-JP
BELL — Enhancement of Lifelong Learning in Belarus	586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP

PRINTeL — Change in Classroom: Promoting Innovative Teaching & Learning to Enhance Student Learning Experience in Eastern Partnership Countrie	585760-EPP-1-2017-1-AM-EPPKA2-CBHE-JP
MaCICT — Modernisation of Master Curriculum in ICT for Enhancing Student Employability	598330-EPP-1-2018-1-DE-EPPKA2-CBHE-JP
UniTeLE — University Teaching and Learning Enhancement	598816-EPP-1-2018-1-SE-EPPKA2-CBHE-JP
DUAL — Promoting Development of Dual Study in Belarusian Higher Education	618513-EPP-1-2020-1-DE-EPPKA2-CBHE-SP
TACEESM — Transforming Architectural and Civil Engineering Education towards a Sustainable Model	618883-EPP-1-2020-1-IT-EPPKA2-CBHE-JP

It is of interest to consider how the BELL Erasmus+ project is being implemented at BrSTU focusing on the changes that have taken place at the university thanks to it.

The BELL project (586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP) involves the development of training courses on the basis of advanced training institutes from six participating regional universities including BrSTU, located in five regions of the Republic of Belarus, which will increase the level of citizens' knowledge in various popular aspects of social life and the economy. Developed online or mixed courses of continuing education for the population of the regions will contribute to the expansion of the availability and effectiveness of additional education for young people and adults in accordance with the state policy of the Republic of Belarus [6].

The project aims to expand the interaction of universities and regional communities in the field of lifelong education providing a wide range of educational programs using a variety of learning technologies including distance learning. The project coordinator is the Continuing Education Center in Rezekne Technological Academy, Rezekne (Latvia).

The implementation of the BELL project at the university took place in several stages. At the first stage, teachers were trained in EU partner universities in new pedagogical technologies (gamification of education, use of interactive methods, principles of training courses' design, features of the functioning of the Moodle platform, etc.). Then, the gained experience was disseminated at the university during workshops among all interested teachers. At the next stage, working groups were formed to develop educational content and methods for assessing the knowledge of students. BrSTU headed the development of the course "Information Security". In addition, the university teachers took part in the working groups of the courses "English Language", "Economic literacy and entrepreneurship", "Energy saving in everyday life". At the same time, equipment for the computer class at BrSTU (interactive whiteboard, PCs, laptops) was purchased at the expense of the project (photo 1).

Project information days were held among the students of the BrSTU as well as at the enterprises of the Brest region and in the employment center. This allowed us to spread the information about project among the local community and to invite young people and adults for project courses. For this purpose, the possibilities of social networks were also used. The first enrollment of students for the project training courses took place in November 2019 — February 2020.

What conclusions can be made from the results of the BELL project implementation at Brest State Technical University?

First of all, it should be noted that for most of the teachers participating in the project this was the first experience of organizing training courses for distance learning. They took part in the discussion of the concept and structure of the courses, developed the course content and assessment methods, organized the advertising of the project in target groups, and accompanied the training of students. This allowed them to gain new experience that can be successfully used in the near future.

The acquired skills of working with students of different ages and belonging to different social groups are of particular value. At the same time, the problem of retaining students for the entire period of study

was clearly identified. Not all of the students were able to complete daily self-study. It is especially true for English courses. Despite the great interest in the courses at the beginning, only 5.2% of students successfully completed their English language training (Table 2).

Table 2 — *Results of piloting of BELL courses at Brest State Technical University*

Course name	Number of students who registered for training	Number of students who successfully completed training	Percentage of students who successfully completed training
English Language	77	4	5.2%
Information Security	47	14	29.8%
Law literacy	24	12	50.0%
Economic literacy and entrepreneurship	43	26	60.5%
Energy saving in everyday life	28	18	64.3%

This means that when organizing new distance learning courses at the university, it is necessary to understand the mechanism for accompanying students during their studies more clearly.

Networking between the EU and Belarusian universities should be noted among the achievements of the project. By international networking the universities involved to the BELL project consolidate the irresearch and educational potential, their overall competence level, available resources, competitiveness and innovation ability. The established personal contacts between the teachers within the consortium are already being used for cooperation and solving problems outside the project.

Photo 1 — *Computer class in BrSTU equipped with the BELL project funds*

Another achievement of the project is the introduction of new pedagogical practices into the university. Skills gained during study visits to EU universities challenge teachers to try new strategies, explore new ideas in existing lectures and workshops, make positive changes in their teaching styles.

Thus, it can be noted that participation in international project activities allows the university to integrate new experience into the educational process, to increase the motivation to innovate among teachers and students. This is especially important because it is the low organizational culture and the reluctance to change that are often the obstacles to the internationalization of higher education [7].

A competent and adequate strategy of internationalization allows Brest State Technical University to develop in conditions of high competition among domestic and foreign universities. When competing for talented Belarusian and international students and researchers, integration of multicultural and international elements into university teaching is a significant factor in addition to the high quality of education, brand recognition and supportive and safe environment.

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PROSPECTS FOR THE DEVELOPMENT OF INTERACTIVE LEARNING METHODS IN HIGHER EDUCATION

The issues of increasing the speed of learning of educational material, increasing the interest of students and optimizing the process of presenting information remain one of the most discussed issues in the field of pedagogy in recent years.

The interactive process is an important learning motivator for the modern generation of students, increasing their attention to the process.

By interactive learning we will understand a special form of organizing educational activities, in which students interact to exchange information, engage together in the process of solving problems, evaluate their actions and model situational tasks (Figure 1).

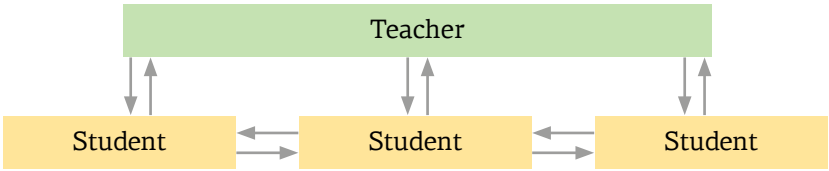

Figure 1 — *Student's educational activity model*

According to Korotaeva, interactive learning simultaneously solves three tasks:

1) educational and cognitive (extremely specific);
2) communication and development (related to the general, emotional and intellectual background of the learning process);
3) socio-orientation (the results of which are manifested already outside the educational time and space) [1, p. 103].

The main methods of interactive learning include:

— group work;
— business game;
— discussion panels;
— debate;
— brainstorming, etc.

The teacher in the interactive learning model could act in two roles:

— Teacher-observer (passive position);
— Participating teacher (active position).

The process of using interactive learning methods involves the intensification of creative activity in the decision-making process and the assimilation of material. The students implement their acquired knowledge in the process of active inclusion in the situation.

An important additional effect of interactive methods is to reduce anxiety during public speeches by constantly practicing this skill during classes. All this leads to increased motivation of students.

It is important to create a suitable educational space for business games, debates, brainstorming sessions and other forms of classes for the implementation of interactive learning methods.

Interactive methods and techniques could be used not only in practical classes. Today, teachers and students show great interest in lectures-dialogues, lectures-conversations.

These forms allow teachers to keep in touch with the audience during the presentation of the material. The dialog allows you to understand the availability of the information presented in time, and draw attention to the most important/problematic aspects.

This practice has long been used in European universities in Spain, Latvia, Sweden, etc. (the authors study the experience of the University of Cadiz (Spain), Rezekne Technological Academy (Latvia), Linnaeus University (Sweden)).

Lecture-dialogue implies the process of exchanging views between the teacher and students for the purpose of logical justification of the educational material.

Information and communication technologies in education can be used to improve the effectiveness of communications and the process of providing information:

— multimedia presentations;
— gamification technologies;
— interactive educational platforms;
— multimedia games, etc.

To date, many applications, programs, and platforms have been developed to improve the mechanisms for submitting material. However, many teachers consider their use impractical: the complexity of the application process may cause a decrease in the concentration of students.

Modern research has shown that students perceive the flow of digital information much faster. This should be taken into account when building the educational process.

The development of interactive learning using information and communication technologies has been successfully applied in European institutions of higher education.

Information and communication technologies make it possible to introduce elements of interactive learning into the distance form of education, which is becoming more and more popular today. The experience of the Open University in the United Kingdom shows a high interest of students in non-traditional forms of education developed on the basis of a student-centered approach.

In this approach, training is considered as "*a complex multi-level process, the decomposition of which into individual components is illogical and*

destructive. The student is considered not as a passive acceptor of information, but as an active participant, not an object, but one of the subjects of the educational process. The key feature of this role of the student is the adaptation of training to their individual abilities, qualities and preferences, and the corresponding structuring of the training schedule, its content and methods used" [2, p. 97].

Research in the field of pedagogy, primarily Western, demonstrates a positive relationship between the quality of education and the introduction of a student-centered approach [3].

In particular, the use of this approach contributes to a more intensive involvement of the audience in the educational process, the formation of an active life position and skills for effective independent decision-making.

At the same time, the natural psychological barrier between the student on the one hand and the teacher/expert on the other hand is overcome, which helps to activate the dialogue between the student and the teacher.

Finally, the practical orientation of students' accumulated knowledge is formed, since now it is based not on information imported from outside, but on the personal experience of the student [4].

Adapting modern educational programs to interactive methods is an important step towards reforming higher education.

Modern educational programs should include a mandatory interactive element with the possibility of implementation in all forms of education. Its construction should be based on a student-centered understanding of the educational process.

Let's present the results of implementing interactive methods in the learning process:

— increase motivation;
— increase the speed of material presentation;
— increase the speed of memorizing materials;
— development of public speaking skills;
— development of communication skills;

— development of analytical and self-analysis skills;
— improving assessment and self-assessment skills;
— development of conflict resolution skills;
— increase self-control, etc.

Thus, interactive learning has a great educational and developmental potential.

Summing up the above, it can be argued that the use of interactive learning methods in the modern educational process can be more effective than the traditional approach in terms of developing students' practical skills and abilities, as well as the ability to use them independently. On the other hand, the introduction of such methods into pedagogical practice requires a significant conceptual transformation of the existing educational process, in connection with the transformation of the roles of all its participants.

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LEARNING LOGIC USING THE OPPORTUNITIES OF THE MOODLE PLATFORM

The modern information & computer revolution is a qualitative leap in the process of changing the ways of storing and transmitting information, including that part of it that forms human knowledge. It was preceded by such qualitative transformations as, firstly, the appearance of alphabetic writing, thanks to which knowledge was objectified; secondly, the invention of printing, which led to the depersonalization of information and made it publicly available; thirdly, the development of mass communication at the turn of the 19th and 20th centuries, which contributed to the formation of new social structures, mass society and mass culture, and, finally, fourthly, the emergence of personal computers, thanks to which instant direct access to information became possible for individual users.

In the 90s of the previous century, the network information revolution took place, during which the speed of information transfer exponentially increased, and the owners of personal computers acquired the opportunity to use the world's information resources. The beginning of the XXI century can be called the telecommunications revolution, during which access to information and communication became possible at a distance. In our time, there is a network telecommunications revolution

that connects mobile communications with the capabilities of a computer.

All these processes have serious socio-economic, political, and socio-cultural consequences. Among the socio-economic effects of the information & computer revolution, changes in the forms and content of socialization, on the one hand, and the formation of a new social structure, belonging to which is determined by qualifications in the field of information technology, are of no small importance. Sociocultural effects seem to be no less (if not more) significant. First of all, we can talk about facilitating and simplifying communication, which does not require any additional efforts and resources, except for the presence of a mobile phone and/or computer, knowledge of the alphabet and the ability to read (in parentheses, it can be noted that even without the last skill, in principle, you can do). In the process of such communication, the dehumanization of cognitive processes occurs, the beginning of which was laid by the distant first experiments of using the software as a substitute for human thinking. Direct and instant access to information, which does not require serious personal efforts to search for and acquire knowledge, has brought into life the so-called computer generations, which receive and assimilate information in a fundamentally different way than it happened before.

These generations are both the object and the subject of the educational process in modern higher education, therefore the issue of using modern information and computer technologies is not just on the agenda, but requires immediate resolution where it has not yet been done. Regardless of the desire or unwillingness of the teaching staff, students actively resort to all those resources, search engines, banks of study papers and collections of cheat sheets, solutions for typical tasks and answers to tests that are posted on the Internet and allow them to quickly and without much stress to complete assignments, and also prepare for classes and exams. The use of Internet resources in no way excludes independence of thought and creativity, but only if users are not looking for ready-made answers and solutions, but are trying to acquire knowledge

and learn how to apply them. In this regard, old trips to the library and work in the reading room do not differ significantly from working with electronic libraries at home using a computer. However, every practicing teacher is aware of the fact that ready-made answers and solutions may be enough to get a diploma, albeit with low marks.

In these conditions, it seems reasonable to construct the educational process in such a way that the use of information technologies by students instead of silently accepting it as an inevitable evil becomes one of the means of forming academic, social, personal, and professional competencies. The key here is precisely the phrase "one of the means" since there is nothing to replace traditional classroom studies, as well as personal communication with the teacher and fellow students. At the same time, modern educational platforms open up a wide range of opportunities to improve educational communication, taking into account the skill of working online and using distance learning, which current students already have by the time they enter the university.

One of the most developed and actively used distance learning management systems at present is the Moodle virtual learning environment. It allows tutors to create a vast array of educational elements and resources. In addition to standard learning elements such as lectures, assignments, and tests, the Moodle system uses a glossary, wikis, blogs, forums, workshops that diversify the learning process. It should be noted that Moodle has a well-developed communications system built-in. On the forum, you can hold discussions in groups, evaluate messages, attach files of any format to them. In private messages and comments, the student can discuss a specific problem with the teacher personally. In the chat, the discussion takes place in real-time. Grading is possible for all elements of the course, including the use of arbitrary scales created by the teacher.

The Moodle environment opens up new perspectives for both sides of the educational process: teachers get a variety of tools for managing and monitoring students' independent work, and students get new opportunities to study additional material, perform creative work, participate

in the exchange of opinions and even evaluate the work of their fellow students. In the context of the progressive reduction in classroom hours in most university disciplines, it is also important that all students of the course can answer questions, solve problems, and complete assignments, and not only those who manage to do this at seminars in the classroom. In addition, the Moodle system provides feedback and comments on the students' answers, that is, although indirect, individual communication with each student. The absolute impartiality of the marks automatically given after passing the test or completing other tasks that can be formalized is also very valuable.

Table 1 — *General structure of the "Logic" course*

Topic
Basics
Logic as a science about thinking
Concept as a form of thinking
Logical operations with concepts
Judgment a form of thinking
Complex judgments
Conclusion as a form of thinking
Types of syllogisms
Induction and analogy
Proof and refutation
Final assessment

All the listed advantages of working with Moodle can be illustrated by the example of the "Logic" course (its general structure is shown in Table 1), which was developed at BrSTU in the second semester of the 2019/2020 academic year due to the need for distance learning due to the epidemic situation and deployed on the university Moodle portal, which

in its turn was created in bounds of the learning process modernization inspired by the international project of EU Program ERASMUS+ CBHE, Enhancement of Lifelong Learning in Belarus/BELL (586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP).

The course includes lectures, tasks for seminars, interim tests, forms and chats that work during classes, and a general test for the course. Each lecture includes several sections, and there is a question after each of them, by answering which the student can move on to the next section. Seminars include standard exercises (the implementation of which requires knowledge of logical forms and the laws of their construction), as well as tasks for the independent composing of judgments and inferences and operations with them. An example of the structure of course topics is shown in Table 2.

Table 2 — *An example of the structure of topics that are part of the "Logic" course*

Title
Types of syllogisms
Lecture 7
Task 7.1 for group CT-43
Task 7.2 for group CT-43
Task 7.1 for group II-16
Task 7.2 for group II-16
Task 7.1 for groups EO-13, B-54, F37

	Task 7.2 for groups EO-13, B-54, F37
	Task 7.1 for groups AS-53, PO-3
	Task 7.2 for groups AS-53, PO-3
	Induction and analogy
	Lecture 8
	Lecture 7

The results of students' work with lectures are shown of Figure 1.

The lecture "Proof and Refutation" should be noted separately, as it was provided for a fully independent study.

In addition to lectures, students had to pass a test for mastering the material. The test results are presented on Figure 2.

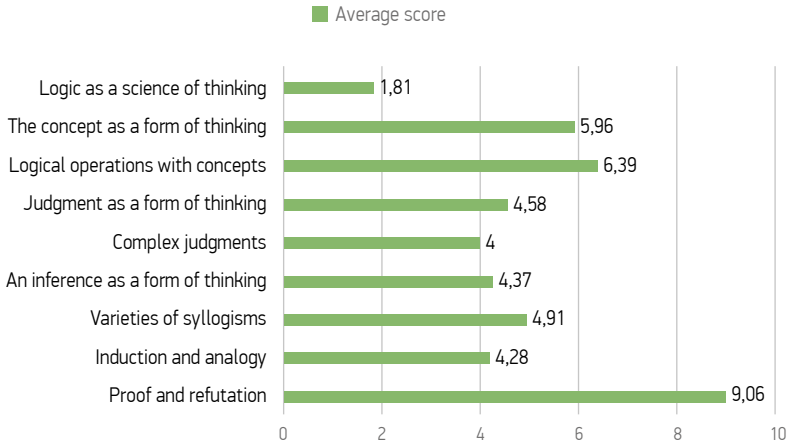

Figure 1 — *The results of students' work with lectures*

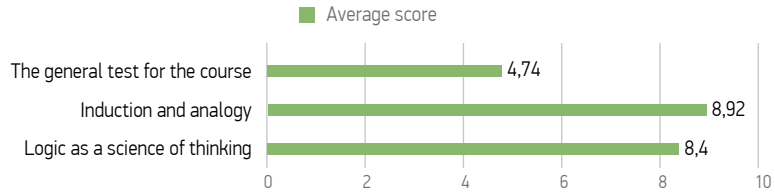

Figure 2 — *Tests results*

The following tasks were created to control independent work (the results are shown on Figure 3):

– Task 6.2 — to apply the rules;

– Tasks 6.1 and 6.3 — require independent reflection;

– Task 7.2 — the most difficult and also requires independent actions (using knowledge about polysillogisms).

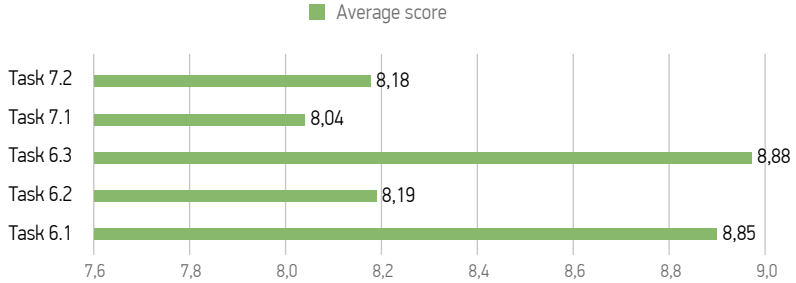

Figure 3 — *Independent work results*

At the same time, interaction with students in a virtual educational environment has certain drawbacks. In particular, the problem is the lack of direct audio and visual contact with the entire group (stream), which is only partially compensated by correspondence in chats and forums. In addition, as in any other form of distance learning, working with Moodle does not exclude students' contacts with each other in order to find out the answer from those who have already received it, and pass it off as their own, or compose their own answer according to the

model available. Logic is an academic discipline that allows you to formulate tasks in such a way that the same answers are impossible, but in the case of other humanitarian disciplines, this is rather difficult to do. In the same case, if the assignments involve expressing one's own opinion, their verification cannot be formalized in any way and requires large amounts of additional teacher time. On the other hand, Moodle includes the ability to cross-evaluate the responses of fellow students by students, and this assessment is also included in the overall result of the course.

Summing up what has been said, it can be noted that work with the help of the Moodle education management system allows you to promptly communicate to students the necessary and additional information related to the course, orient them in scientific and educational literature, make direct references to primary sources and scientific articles, diversify the forms of control and knowledge testing and involve all students in the discipline. Classroom lessons are also targeted for all these goals, but the time and organizational framework does not always allow achieving them in full. At the same time, quality education cannot be acquired without direct person-to-person interaction, during which students acquire not only knowledge but also value attitudes and norms — both within the framework of their future profession and in the broader sphere of characteristics of a person with higher education.

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DEVELOPMENT OF BELL ONLINE COURSES: PROBLEMS AND SOLUTIONS

Recently, the world has faced with the need for new interactive educational technologies and inclusive education implemented through the technologies of distance and blended learning. This is especially relevant for the programs of additional education for adults which contribute to the active inclusion of various groups of citizens in to the public life.

International programs and projects contribute to the widespread dissemination of new educational technologies in the Republic of Belarus and educational programs of non-formal additional education for adults as well [1]. Among them, there are educational programs of the European Union, US Exchange Programs and other programs for our country citizens to participate.

Thus, Life Long Learning principles are becoming more and more relevant in the Republic of Belarus. The interest of young people and adults in training courses is increasing because these courses are aimed at developing skills and competencies that are currently in demand. Activities to support entrepreneurship and social business development are being developed.

In particular, new contacts and partnership with European higher education institutions were established due to the international project of EU Program ERASMUS+ CBHE, Enhancement of Lifelong Learning in Belarus/BELL.

There are the following participants: Rezekne Academy of Technologies (Latvia) — project grant holder; Linnaeus University (Sweden); The University of Cádiz (Spain); The Open University (UK). Moreover, Life Long Learning centers have been created in Belarusian universities; network interaction between Belarusian universities is developing to address the issues of Life Long learning. As a result of the internships for teachers at the universities of the BELL project consortium, modern distance learning technologies have been introduced in regional universities of the Republic of Belarus, and training courses have been developed and implemented into practice. All these activities are aimed at improvement of the citizens level of knowledge in various aspects of social life and economy.

In the framework of ERASMUS+ project BELL in 2019, 1296 students were enrolled for 5 new on-line (blended) LLL study courses in English, IT, Energy Saving, Entrepreneurship, Financial & Law Literacy to the general public. 5 regions of the Republic of Belarus are represented in the project.

Three main problems that we solve through the development of BELL online courses, are as follows:

1) nowadays in the Republic of Belarus there is a lack of available distance courses for the population that can be aimed at solving social problems of society and at developing skills and competencies that are in demand for life. The problem of the availability of educational programs for non-formal continuing education has become especially evident in the context of the global outbreak of COVID-19;
2) low level of students' activity and motivation during distance learning courses which is reflected in a low percentage of successful completion of the courses. The percentage of students who successfully completed distance courses is, in general, no more than 10–30% of those enrolled for training courses;
3) the problem of ensuring sustainable interest and demand for training courses for the population and the matter of the

inclusion of educational programs of non-formal additional education as well. This situation is also closely connected with insufficient interest and involvement of local stakeholders (such as universities, government bodies, businesses, NGOs, local communities) in the training processes of the population and low level of support for natural sciences in society [2].

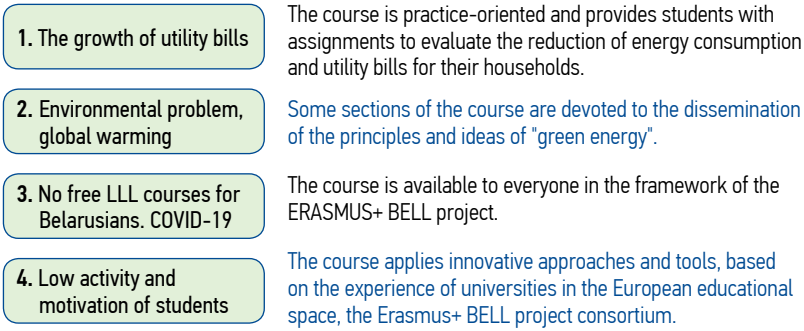

Figure 1 — *Problems and ways of solving them in the design of the LLL course "Household Energy Saving"*

To solve the first problem, the content of the course "Entrepreneurship and Financial Literacy" was expanded with the section "Social Entrepreneurship". The Social Entrepreneurship section is based on the results of the Community Connections USAID internship. This section makes it possible to get the students acquainted with modern trends in entrepreneurship. With the example of the social enterprise PONYRIDE (Detroit, USA, https:www.ponyride.org), in this distance course students can have a look at creative business ideas of social entrepreneurship in the USA and other developed countries as well.

We will consider the directions for solving above-mentioned problems using the example of the course "Household Energy Saving" (Figure 1).

To increase the activity and motivation of students of distance learning courses, special interactive tools and Internet technologies, especially resources for the digital content development can be used. These

technologies are actively used in European universities. As for interactive educational tools, in modern education they are actively used primarily to involve students to the educational process.

At The University of Cádiz our teachers were presented with the tools for digitalization and gamification of the educational process. As a result, some of these tools have already been introduced into the work with listeners and university students, that helped to increase the interest in learning. Such resources as eXe learning, H5p, Hot Potatoes, Socrative, Active Presenter, Kahoot, Menti and others can be recommended.

One more direction for improving distance courses is the usage of the educational content design approaches, which are primarily focused on the student. Analyzing the practice of this approach implementation during the development of distance courses BELL, the experience and approaches used at The Open University can be recommended.

Thus, while designing distance courses, it is advisable to analyze the profile of the student in order to get an idea of his needs. Let's consider the main questions that the teacher should ask himself while designing a course:

— Who is supposed to be my potential student?
— What's the age of the student? What professional background does this student have?
— What are the strengths and weaknesses of the student?
— What can motivate the student to learn?
— What difficulties can he/she face with?
— What style of learning does my student prefer?

One more important thing is to make the results of the learning efficient and evident:

— What should the student do to successfully complete the course?
— What will the student be able to do after the course completion?

As a result, the motivation of the student is learning and gaining knowledge, not just getting a good mark.

In addition, let us note the experience in designing training courses at Linnaeus University. For the clarity of the educational material

presentation, methods of studying and subsequent solution of complex or tricky problems are used. These methods are aimed at detailed presentation of the problems (Rich Pictures), as well as a detailed description of the structure of the system (System Maps). The use of the Rich Pictures methodology made it possible to present students with an interactive, simple and understandable curriculum for a blended LLL course "Household Energy Saving" (Figure 3).

Figure 2 —
E-Quiz of the Energy Saving course

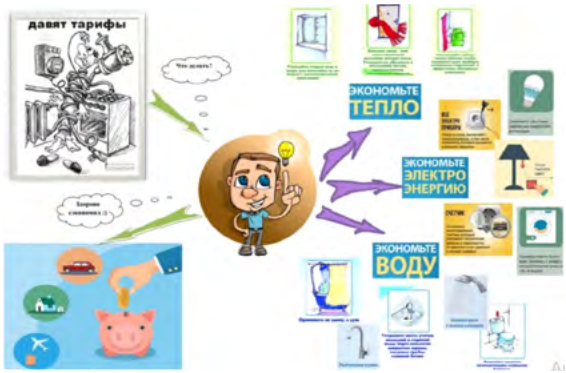

Figure 3 —
Interactive Course-curriculum

It should be noted that the design of a distance course on household energy saving using electronic interactive educational tools and a student-centered approach has allowed to achieve good results. In particular, 56 % of students have successfully completed the entire course. Graduates of the course "Household energy saving" presented the real results of reducing utility bills, and also outlined their intentions to further apply the acquired skills.

Speaking about the development of inclusive additional education for adults in our country and ensuring sustainable interest and demand for training courses for the population, it is advisable to involve a wide range of stakeholders in these processes [3–4]. To develop this area, we offer the following post-project sustainability ideas (Figure 4).

Figure 4 — *Post-project sustainability ideas*

Thus, for the further development of educational activities and improvement of distance education, Belarusian universities are advised to continue the implementation of the best practices of universities in developed countries, to intensify networking and to promote the principles and ideas of Life Long Learning, to actively involve government bodies, business, NGOs, local communities in these processes.

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ON MODERNIZING THE APPROACH TO TEACH THE ALGORITHMS AND PROGRAMMING BASICS

Introduction

The Computers & Systems Department of Brest Technical University provides higher education to students of the first and second stages, and one of the main special disciplines taught at the first stage is the "Basics of Algorithmization and Programming" (OAiP) subject. The goal of teaching this discipline is to master the methodology for setting, preparing and solving engineering problems on modern computers. The tasks are the study of a procedural programming language (currently, the C language is rigidly fixed in the basic curricula for all specialties) and automated development tools (IDE), laying the foundations of a programming style, acquiring development and debugging skills, and developing an algorithmic thinking. Additionally, the first-year students acquire skills of self-control, gain their interest in programming, and create the motivation for self-development.

The traditional problems that are observed are the low activity of students in terms of their participation in the educational process, adaptation to the requirements of the university after school, as well as

a low level of algorithmic thinking and low skills in program development. If these problems are not solved well enough in the first year, this has a strong negative effect on subsequent disciplines. Moreover, the relevance of effectively dealing with these problems within the discipline had predictably intensified when the division of higher education into first and second stages led to a decrease in the number of teaching hours (and laboratory classes were significantly affected).

In the process of trying to solve these problems, methodological changes were made to the course, which will be discussed below.

The technologies of teaching

The following methodological changes were made to the course in attempts to solve these problems.

A visualization-type lecture allows one to schematically and graphically present the needed supporting information, which is supplemented by video material. This type of lecture is the most important one for visual learner students, because the maximum assimilation of the material occurs with it. In addition, it increases knowledge in the field of algorithms, develops systems thinking, allows students to get clarity in the design and optimization of the code. The approach is applicable to all lecture topics.

A provocation-type lecture. This type of lecture allows one to control the awareness of the perceived material by the listeners, develops their critical thinking, increases the spirit of competition and satisfaction from the educational process. At the beginning, the lecturer announces how many mistakes will be made in the lecture. At the end, the mistakes found by the students are checked and discussed. We have used this type of lecture for the following subjects: "Loops", "Arrays", "Recursion", "Lists", and "Binary Search Trees".

Conference-type lecture. It is built in the form of a scientific and practical lesson with reports and speeches made by students (in small groups) on a previously prepared problem within the framework of the

curriculum. The lecturer sums up the results, clarifies information, formulates the main conclusions. This type of lecture allows us to develop communication skills, healthy competition, the level of criticality and satisfaction from the process. It is good to be used for final lectures which complete individual sections of the course.

Problem-type lecture is carried out in the form of a dialogue with students, during which a joint search for a solution to the problem takes place, and typical mistakes in work are analyzed. This approach allows one to develop the communication skills of young people, and also leads to an increased awareness of algorithms and the basics of procedural programming. We used this for lectures after the intermediate control.

In addition, during the lectures, there is a combination of listening and checking the knowledge of students (2 times per lecture), which makes it possible to better retain the attention of the audience.

In the course of laboratory studies, we use:

The "discussion" method, which is used during the discussion of the issued individual tasks. She maximally activates the thinking activity of students and increases the assimilation of theoretical conclusions. In addition, this method increases the motivation for learning.

The brainstorming method is aimed at reducing students' self-criticism, increasing self-confidence and developing the skill of a creative approach to solving problems. It is used in laboratory tasks on the following topics: "Loops", "Arrays", "Recursion", "Stack", and "Binary Search Trees".

We also use heuristic conversation when students defend laboratory work. This active teaching method is based on problem-oriented questions that the student provides answers to. As a result, thinking is activated and new knowledge is acquired.

It should be noted that heuristic conversation proved to be the least effective among those listed: in a number of cases, students got lost in the process of trying to answer (perhaps there is an external reason for this — a programming language that was not originally created for teaching students). To a lesser extent, problems arose with the brain-

storming method among some of the students who had difficulties with improvisation and free expression of their thoughts.

In the course there are forms of current (twice a semester) and final assessment. To increase interest and motivation for educational activities, we use a credit rating system of assessment during the academic semester: students get acquainted with the list of compulsory works, the requirements of teachers, activity and attendance are recorded. At the end of the semester, the rating of students is built according to the results of their work, and then it is taken into account in the final control.

Used software tools

The cross-platform nature of the C language allows students to use any OS and development environment on their own devices. However, Ubuntu Linux and the Qt Creator IDE are installed as the main systems in the classrooms. The advantage of using these instrumental environments is the initial formation of students' habit of the variety of graphical shells and interfaces. In addition, elements of command line and environment skills make it easier to study a number of courses in the next years of study, including such as "Program Design and Programming Languages" (the course includes creating graphical applications in Qt Creator), "Computer Architecture" (within which skills in writing elementary Linux kernel modules are acquired), etc.

Conclusion

Although the measures used are not a panacea, the past two years of study show positive dynamics in mastering the knowledge of students, interest in future activities increases, motivation to study increases, and the adaptation period of study is more easily tolerated.

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DISTANCE LEARNING: CONCEPTUAL FOUNDATIONS AND PERSPECTIVES

It is not a secret that in the modern world, Internet learning is a convenient way to share knowledge anywhere without leaving home. It is enough to have a personal computer (laptop, tablet, mobile phone) and Internet access at hand. Given the unfavorable epidemiological situation in the world, this form of education is particularly relevant and allows saving not only time, but also the health of students.

In the Republic of Belarus, *distance education is a form of correspondence education, where education is carried out mainly using modern communication and information technologies* (part 2 of paragraph 3 of article 17 of the Education Code of the Republic of Belarus) [1]. That is, it acts as an integral part of the correspondence form and is not a separate form of education. In fact, it is an auxiliary tool that complements traditional forms of education.

The legal term "distance education" should not be confused with the term "distance learning," which is widely used in the educational environment in interactive learning. The latter is also based on the use of modern information and communication technologies and tools, including interactive computer programs, the Internet, e-mail, etc. But if the distance form of obtaining education is the process of transferring (broadcasting) knowledge, for which the teacher and educational institution are responsible, the distance learning is the process of obtain-

ing knowledge through the student's independent cognitive activity, and therefore it is he who is self-responsible for the result. Thus, these concepts from the point of view of Belarusian law are not identical.

In the modern Belarusian educational environment, distance learning as a method of obtaining knowledge is becoming more and more widespread. Thus, the Order of the Minister of Education of the Republic of Belarus from 29.11.2017 № 742 approved the Conceptual Approaches to the development of the education system of the Republic of Belarus until 2020 and in the future until 2030 [2]. In the mentioned normative legal act in the first section it is noted that *"...Belarus is rightfully considered a state where the principle of continuity of education — "education through life"..."* is implemented.

The document encompasses all levels of education — from preschool to special. But in the context of the present study we will focus on the additional adult education.

Thus, one of the most important trends in education in recent decades is the transition from one-time qualification for life to the assimilation of competencies that contribute to self-study and the need for learning and self-improvement throughout life. And this can be ensured not only in the framework of educational programs of professional education and retraining, but also, in particular, in training courses, trainings and other educational events aimed at satisfying the cognitive needs of students in a certain area of their life or knowledge.

Among a number of main tasks in the field of additional education of adults is the development of distance form of additional education. And the mechanism for the implementation of the tasks until 2020 and in the future until 2030 provides for the development and approval of the regulatory framework for distance learning in the system of additional education for adults, the design of educational programs based on a competency-based approach and modular principle and other activities.

The information and communication environment of the educational space is identified as a separate issue in the document. It is assumed that

the digital transformation of the educational sector will create national information and educational environment, which, in turn, will lead to an increase in the intellectual and creative abilities of students, to improve the professional skills of teachers, will provide wide access and introduction of innovative methods based on information technology into the educational process. One of the promising areas of focus here is the deployment of a multimedia platform to ensure the availability of modern information resources and remote provision of educational content to participants in the educational process.

We believe that from the above fragmented analysis of the Conceptual Approaches to the Development of the Education System of the Republic of Belarus until 2020 and for the future until 2030, it can be concluded that the development of distance learning using modern communication and information technologies is very relevant and timely. And the project "Enhancement of Lifelong Learning in Belarus/BELL" is at the forefront of the information and communication environment of the educational space of the Republic of Belarus.

Like any phenomenon, distance learning has both positive and negative sides. Thus, the benefits of such training can be attributed: 1) free access and mobility; 2) reduced costs of learning; 3) flexibility of learning and the ability to develop in step with the times; 4) potentially equal learning opportunities and objective criteria for evaluating knowledge.

However, there are some difficulties in distance learning. Firstly, the student needs strong motivation, because he learns almost all the educational material on his own; 2) limited personal communication of students with each other and with the teacher; 3) user identification problem; 4) insufficient computer literacy.

And as the practice of implementing the above-mentioned project has shown, these difficulties are present during on-line training of learners despite its free access.

To improve distance learning within the project, and what isn't less important, to ensure its sustainability it is desirable to further take into account the Provision on training courses of the additional education of

adults approved by the Regulation of Council of ministers of Republic of Belarus of 15.07.2011 No. 954 (further — Provision) [3].

Thus, in accordance with paragraph 2 of the Provision, training courses are an educational event aimed at satisfying the cognitive needs of students in a certain field of professional activity or field of knowledge.

Mastering the content of the educational program of such courses is not aimed at acquisition of a profession, retraining and professional development of managers, specialists, workers (employees).

Paragraph 9 of the Regulation provides that fee-based educational services are to be concluded with trainees who master the content of the educational programme of the courses on a paid basis. Paragraph 11 stipulates that persons are accepted for training regardless of their education. Enrolment is made by issuing an order.

The document confirming the student's mastery of the content of the educational program of training courses is a certificate of training. At the same time, it should be remembered that the certificate of training in the prescribed form, as well as various certificates, and other documents of their own standard are not documents of state standard, confirming the assignment of qualification, category of profession and the right to perform the relevant work. This is due to the fact that training at courses may be aimed only at meeting the cognitive needs of citizens, and not at awarding the professional qualification.

In developing and design of the online courses we used the experience of the Open University of Great Britain, the largest academic institution in UK. The Open University offers a wide range of courses at various levels — from certificates and diplomas to undergraduate and postgraduate degrees. At the undergraduate level, qualifications available include:

— Undergraduate certificate — equivalent to ⅓ of a bachelor's degree.
— Undergraduate diploma — equivalent to ⅔ of a bachelor's degree.
— Bachelor's degree without honours — equivalent to ⅝ of a bachelor's degree.

— Bachelor's degree with honours — full bachelor's degree.

Similar qualifications are offered at the graduate level:

— Graduate certificate — equivalent to ⅓ of a master's degree.

— Graduate diploma — equivalent to ⅔ of a master's degree.

— Master's degree — full master's degree.

It is worth mentioning that an Open University degree has the same status as one from any top UK university. Recognition outside the UK may differ, however. Happily, many employers and organisations worldwide do employ Open University graduates and understand that an OU degree is equal in academic standard to a degree from any other British university [4].

We believe that the order established in the Regulation will correspond to the distance courses of the project "Enhancement of Lifelong Learning in Belarus/BELL" to the greatest extent possible. And the issue of the final legal document — certificate of training — will serve as an additional motivation factor for the successful completion of online training courses.

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PRACTICE OF USING DISTANCE LEARNING TECHNOLOGY IN THE EDUCATIONAL PROCESS OF A HIGHER EDUCATIONAL ESTABLISHMENT

The technological progress has radically changed men's existence in the 20th — early 21st centuries, having created the special world, it is virtual reality. The Internet has become that channel for transmitting information which has influenced the lifestyle, a lot of human habits, including mental and intellectual ones. It has opened access to a great variety of information, and also made a person the object of his influence, having transformed his mental and cognitive activity. Until recently, it was believed that the mental capacity of the brain was stable in its nature. But modern scientific research indicates that our brain is developing and updating, it is able to form new ways of processing information, according to the updated conditions and circumstances.

The new educational environment, which has been purposefully created for realizing the educational process and for students to master any professional educational program, irrespective of time, their place of residence, age, and other features, refers to new conditions that have changed the life and work of people.

The information educational environment has a wide variety of capabilities: electronic information resources, technical means, the combination of information and telecommunication technologies, etc. Theoretical and practical aspects of its creation and effective work have been considered in a number of psychological, pedagogical, sociological and technical studies. For example, I. N. Rozina considers the high speed of mastering the knowledge system, interactivity and high-quality feedback, individual motivation, modularity, etc. as one of the most important principles that contribute to the high quality of graduates' training [3].

Innovations certainly include distance learning technologies, which are increasingly being used by educational establishments. This fact meets the requirements of the modern education development, and the introduction and effective use of new information services, training systems and technologies, electronic educational resources is one of the indicators of its effectiveness [2].

Distance learning technologies are realized by means of using information and telecommunication networks, at a distance, i. e. with the indirect interaction of teachers and students. The use of distance learning technologies provides the organization of distance education.

Distance education, along with traditional one, is considered to be a special form of learning. Does this fact mean that it will substitute the traditional education? This problem is being actively discussed in scientific and public societies; it excites educators, parents and students themselves. Of course, distance education has a number of advantages.

First of all, it is its accessibility and democracy, i. e. a person with any disabilities (including those with disabilities) can receive knowledge at home, while at work, anytime and anywhere. Such conditions allow a person to learn all his life, improving professional skills, diversifying himself as a person, i. e. putting into practice the trend of continuous learning. The use of Internet technologies provides new opportunities for advanced training, retraining, mastering further education and, of course, reduces the cost of obtaining it.

Secondly, it has more individual character, because people have different abilities. A student himself may regulate the pace of mastering the material, return to poorly understood topics, not being afraid of external negative psychological effects, and overcome his shyness and excitement, etc.

Thirdly, distance education encourages a person to study without an instructor, to be active, to develop skills of internal motivation and control. The positive results achieved in the process of such work increase self-esteem, self-confidence, and form business orientation.

Fourthly, this form of education involves more objective assessment of students' educational activities by teachers without personal likes and dislikes, without individual prejudices and social stereotypes (nationality, gender, status, etc.).

And, of course, distance education has modern, very attractive technologies for young people: chat classes, webinars, newsgroups, virtual communities, etc. Such technologies create vivid sensual images, improve memorization, make the cognition process more saturated and deep, create interest and intrinsic motivation for learning.

In order to improve the quality and efficiency of providing distance education services, to identify its shortcomings, we have conducted a survey which was performed on the basis of the Vyatka State Agricultural Academy. Anonymous and voluntary online questionnaires were answered by the students of various modes of study and of different faculties: engineering, biological and of veterinary medicine. Among them were 89% — full-time students, 11% — part-time and evening classes students; freshman classes (82%) and undergraduates (18%), urban residents (65%) and rural residents (35%).

In order to achieve the goal, the following tasks were set:

1. To study the students' readiness for distance education.
2. To compare the students' attitude to distance education. The respondents were full-time, part-time and evening classes students who have different places of residence (city and village).

3. To identify the advantages and disadvantages of organizing the educational information environment at university and the use of distance learning technologies.
4. To develop recommendations for improving the distance learning system at the academy.

The following methods have been used in the study: the study of psychological and pedagogical literature, observation, conversation, questionnaire survey, statistical data processing.

Several questions of the questionnaire were aimed at studying respondents' opinions about the conditions created at the university for realizing distance education, including special circumstances (self-isolation due to the quarantine). At the appropriate times at the academy the order about distance education was issued, the distance education regulation was developed, which determined the procedure for providing educational and methodological assistance to students, for conducting current and final control of knowledge; the faculties deans formed the timetable in accordance with the curriculum, and all the participants of the educational process were informed. The academy teachers took short courses on the organizing distance education. Two thirds of the total number of respondents (both urban and rural residents) had already had their personal account and actively used it. But only one third of students praised the convenience of its use in the process of online education.

To receive educational materials and send answers, students mainly use the electronic information educational environment on the official website of the academy (36%), e-mail (24%), social networks (18%), and personal account (12%). Other educational resources, programs (Whats App, Viber messengers, Zoom applications, Microsoft Teams corporate platform, etc.) are seldom used by students.

Half of the total number of respondents (regardless their residence and year of study) quickly mastered the use of the information educational environment (51%), 29% mastered, but not immediately, the remaining 20% are still experiencing difficulties, at the end of the academic year. Thus, we can state that one fifth of students have the lack

of computer literacy and the lack of experience and distance education skills.

The conducted survey revealed some problems and disadvantages of distance education. Among the most frequent were: the impossibility of revising the educational material (18%), the lack of time to pass check-up tests, to get credits and pass exams (15%), poor feedback from teachers (13%), low Internet speed and the lack of literature (11%), inability to open course content (10%). Other indicated reasons included the Internet inaccessibility, insufficient knowledge of the PC or its absence, restrictions on the volume of downloaded files, inability to download course content, etc.

As can be seen from the above data, many of the disadvantages are technical in nature. Thus, we need good technical readiness of the university and the willingness of students themselves to use distance learning tools.

It must be noted that the education system is still quite inert, it is lagging behind modern innovations, and it mostly has traditional forms of education. So, among the answers to the question "What distance learning tools are used in the education process?" respondents mentioned the following: tests (26%), presentation of textual material (24%), individual tasks (19%), presentations (17%). The following tools are used very rarely: online lectures, virtual laboratory work (4%), educational films (3%), case solving (2%).

In the practice of the academy staff there are no such forms of classes organization as webinars, conferences, virtual scientific communities, etc.

Of course, this result can be explained by the fact that the significant part of the university's teaching staff is older people (including retirees) who do not have good computer skills, learn new technologies more slowly, and they get used to traditional forms of conducting classes. There are not many teachers who are competent not only professionally, but also technically, i.e. they can create and use new educational technologies. The problem of the slow mastering and introducing new

forms and methods into pedagogical practice is also related to the fact that most teachers conduct not one, but several academic disciplines, and have a lot of current affairs, i.e. they have very high labor intensity and so they have little free time to create complete, interesting electronic material and to update it regularly (in the students' curriculum there are such disciplines where information is constantly changing), and to improve their professional skills. The creation of electronic learning tools still requires special knowledge, skills that many teachers do not possess. In addition, low wages of the staff don't motivate for mastering and applying modern educational technologies.

Of course, young personnel use modern means of communication and information actively and with great desire. The respondents marked the following advantages of distance education: learning in the familiar home environment (22%), individual rate of learning the material (17%); saving time, including on the road (14%), the flexibility of organizing the educational process (9%), the accessibility of the preservation of educational material and the ability to combine study and work (8%). However, 15% of the surveyed students failed to find the benefits of distance education. It should be noted that the students living in rural areas found more advantages in distance education than urban residents (21.1% versus 5.6%), and it is more convenient, although technically difficult to learn and use (47.4% versus 30.6%).

As for disadvantages of distance education, among them were: the increase in the study load and time for mastering topics and completing assignments (19%), the decrease in the education quality in general (16%), poor feedback from teachers (14%); reduction of free time for personal affairs and activities, recreation, creativity, great physical and mental fatigue (13%), difficulties in using the academy educational portal (11%), the lack of direct contact with other students (8%). Based on the curators' conversations with their student groups, it was found out that young people are not satisfied with the replacement of "live" classes by simple reading of educational materials, electronic textbooks and manuals, posted on the portal; the lack of emotional contact and ano-

nymity of communication. In their opinion, it leads to misunderstanding of the theoretical material and the foundations of professional activity, to the inability to apply theoretical knowledge in solving practical problems, to weak formation of practical skills.

Undoubtedly, distance education also demands higher standards of the students themselves: they should possess formed high motivation for obtaining education (but many students are motivated to get a diploma, not knowledge), they should understand the importance of self-education, hard work and perseverance, developed skills for applying mental efforts, willpower, perseverance, determination, etc. Poor development of such abilities, as a rule, reduces the quality of e-education.

For all of the above reasons, the majority of students are not satisfied with the process of distance education (47%) or found it difficult to give evaluation to it (27%). But the students living in rural areas rated their satisfaction higher than urban residents (36.8% and 16.7%, respectively). This fact should be used by the university as attractive for expanding the scope of educational services and attracting applicants living very far from our town.

And, of course, the significant part of the respondents do not want to continue their distance education after ending the self-isolation regime: "no" answered 55% of students, 24% of respondents found it difficult to answer the question, only 22% of the students answered in the affirmative.

We were pleased with the students' indifference to improving the quality of distance education services. Students advocate for each teacher to create their own chat for communication, to introduce online broadcasts, to improve the quality of feedback between a teacher and a student, to increase the volume of downloaded files, and to organize the electronic information educational environment more clearly.

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Conclusions and Recommendations

The electronic information educational environment of the university, including distance technologies, is not only the addition to the traditional forms of education organization, but it should also become the significant factor in improving university education and meet the requirements of the law "About the Education in the Russian Federation" [4].

The efficiency of the pedagogical process in distance education directly depends on the modernization of its technical component, as well as on instructional design, which is aimed to develop online activities of teachers and students in details, thereby ensuring high quality of the teaching process.

For this purpose it is necessary:

1. To conduct systematic, regular training of teaching staff, to increase their digital literacy, using not only the mass teaching principle, but also the individual one (taking into account age, employment, level of training). To improve the quality of training and retraining organization.
2. To develop a flexible system of motivation (internal and external) for creation and active use of distance learning technologies both by the teachers side and by the students. A well-motivated teacher will be more productive in encouraging his students to learn.
3. To improve the methodological support of distance education, it is necessary to create mobile creative groups (if possible, at each faculty) from several highly qualified specialists: programmers, methodologists, computer designers, subject teachers, whose main task will be to create the creative educational environment (rich interactivity, multimedia, non-linearity, integrativity, mathematical modeling, accounting for individual characteristics, etc.).
4. To combine traditional teaching methods and forms with modern computer technologies in order to realize educational programs fully and to ensure the high-quality of students' training.

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STAGES OF ORGANIZING DISTANCE COURSES

Distance education is becoming more and more popular in the modern world. Recent events related to coronavirus infection have only accelerated the development of all its forms.

Today there is no need to mention all the advantages of distance learning, it is enough to mention two of them: accessibility and openness, which makes it possible to study remotely from the place of study, without leaving your home or office, and allows a modern specialist to study almost all his life, without special business trips, holidays, combining with the main activity, while focusing on training in the evenings and on weekends. You can study from almost anywhere in the world where there is a computer and the Internet.

According to the Code of the Republic of Belarus "On Education", the distance form of education is understood as "a type of extramural education, when education is obtained mainly using modern communication and information technologies". According to this definition, educational institutions cannot use distance learning as a separate form, but only as a form extramural studies. This approach limits the use of distance learning and the ability of teachers to gain and accumulate full-fledged experience in organizing and conducting distance learning.

The experience of organizing distance courses was gained by teachers of the Institute for Professional Skills Upgrading and Retraining of "Yanka Kupala State University of Grodno", thanks to their participation in the implementation of the international technical assistance project "Enhancement of Lifelong Learning in Belarus within the framework of the Erasmus+ program "Capacity Building in Higher Education: BELL (586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP). Project goal is development and improvement of lifelong education in Belarus with the effective use of distance learning and the tools of the Bologna process for the development of the regional labor market.

Within the framework of the project, together with other Belarusian universities, we organized and conducted distance courses in various areas: "Information Security", "English Language", "Fundamentals of Entrepreneurial and Financial Literacy", "Fundamentals of Legal Literacy", "Energy and Resource Saving at Home as a direction to reduce utility bills". The purpose of this article is to familiarize with the stages of organizing distance courses that the project participants took.

The process of implementing distance courses can be divided into the following stages:

1. Preparatory stage. At this stage, the experience of European universities, which were also participants in the project, was studied. Groups of teachers from the Institute visited various European universities (Great Britain, Spain, Sweden, Latvia) and participated in seminars to familiarize themselves with their experience in organizing distance learning.

2. The process of preparing training materials. In preparing the training materials, the experience of the Open University in the UK was taken as a basis, the essence of which is the division of all material into modules. The peculiarity of these modules is that the student-centered modules are at the center of the entire educational process

(student-centred modules). This further determines the structure and content of educational modules.

Before creating a training module, an analysis of the target audience and modeling of a potential student (student profile) is performed, taking into account his age, level of education, interests and preferences, opportunities and limitations. This approach allows us to assume and formulate the results (learning outcomes) that the student predictably expects to receive upon graduation. Further, these results determine the content of the training module and the student's activities.

Key ideas underlying the development of the module:

— learning is an active process;
— assessment is a part of the educational process;
— training should be phased and at each stage a student focuses on specific types of activities, which allows him to successfully advance.

The module is divided into topics. Each topic is allocated a certain number of hours (weeks), depending on its importance and complexity. In the process of developing a module, it is determined what types of activities students will carry out during the study of each topic, as well as their percentage. It was repeatedly emphasized at the seminar that the Open University does not set itself the task of transferring simply knowledge to the student, the essence of the teaching process is its practical application.

Much attention is paid to the assessment of knowledge and skills. The purpose of the assessment is not to control knowledge, but to establish feedback with the student in order to obtain objective and timely information about the problems and intermediate learning outcomes for timely adjustment of the educational process.

3. The process of preparing content and posting on the Internet. Distance learning was implemented by us in the Learning Management System (LMS) Moodle. According to information from the official Moodle website, more than 60% of all educational institutions in the world

use it. This system has built-in tools for developing training courses and allows you to create and use a wide variety of elements for content creation. To present the material, organize feedback, control the completed tasks, we used various elements of the LMS Moodle (lecture, glossary, task, chat, forum, test, hyperlink, SCORM package). However, no matter how varied the capabilities of the Moodle system, no matter how large the number of proposed content creation tools, the system cannot exclusively satisfy all the requests of course developers. This is especially true when developing training courses that provide distance learning. The lack of direct communication with the teacher should be compensated for by the most visual teaching materials with visualization capabilities. When participants of the Project visited the University of Cadiz, Spain, a large number of additional software tools for content creation were presented in addition to the LMS Moodle tools: Active Presenter, H5P, eXeLearning, Hot Potatoes, LAMS, Kahoot, Socrative. Most of these software tools were used by us for content development, and the results are integrated into LMS Moodle.

4. Direct learning process. Before the start of distance learning, a meeting of students was held, at which they were given passwords, introduced to the conditions and requirements, and also conducted entrance classroom sessions (2–4 hours). The training of the trainees took about four months.

5. Analysis of the conducted distance courses and improvement of the structure and quality of training materials. At this stage, the information collected through the feedback is analyzed, the comments of the project coordinators are taken into account and the appropriate adjustments are made.

After the implementation of the first set of data for distance courses, we made the following conclusions: the development of a high-quality distance course is a complex and time-consuming process that requires a teacher, who is, among other things, a developer, a large number of

skills in different areas: pedagogy, psychology, information technology. Practice shows that many teachers lack knowledge and skills in the field of information technology. Consequently, if universities want to develop distance learning, work should be organized to train teachers who will do this. In addition, developing quality content for distance learning is a long process that can take years, during which continuous improvement is required.

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IMPLEMENTATION OF ERASMUS PLUS MaCICT PROJECT IN BREST STATE TECHNICAL UNIVERSITY BASED ON NEW APPROACHES AND METHODS

Introduction

Growing interest in internationalization of higher education can be explained by different reasons.

Firstly, the process of globalization of the economy and labour markets pushed demand in internationally-competent workers with knowing of foreign languages, social and intercultural skills. As world economies become increasingly inter-connected, multilingualism and intercultural skills have grown in importance on a global scale. Secondly, an export of educational services has become one of the sources of revenue for higher education institutions (HEIs) and national economies in many countries.

Advantages of internationalization of higher education are apparent: improvement quality of training, joint research projects, implementation of international quality standards and enlargement of international cooperation. Currently international dimension of higher education is being increasingly promoted on the national and institutional levels in many countries. It should be noted that both levels are very crucial.

The national level has a significant influence on the international dimension of higher education through policy, funding, programs and regulatory frameworks. Yet it is usually at the institutional level that the real process of internationalization is taking place [1].

To some extent, institutional level is a mirror which reflects national policy. More and more higher education institutions became independent and strategic actors in the process of internationalization.

Theoretical background

The traditional classroom often looks like a one-person show with a largely uninvolved learner. Traditional classes are usually dominated by direct and unilateral instruction. Traditional approach followers assume that there is a fixed body of knowledge that the student must come to know. Students are expected to blindly accept the information they are given without questioning the instructor. The teacher seeks to transfer thoughts and meanings to the passive student leaving little room for student-initiated questions, independent thought or interaction between students. Even the in activities based subjects, although activities are done in a group but do not encourage discussion or exploration of the concepts involved. This tends to overlook the critical thinking and unifying concepts essential to true science literacy and appreciation. This teacher-centered method of teaching also assumes that all students have the same level of background knowledge in the subject matter and are able to absorb the material at the same pace.

In contrast, constructivist or student-centered learning poses a question to the students, who then work together in small groups to discover one or more solutions. Students play an active role in carrying out experiments and reaching their own conclusions. Teachers assist the students in developing new insights and connecting them with previous knowledge, but leave the discovery and discussion to the student groups. Questions are posed to the class and student teams work together to discuss and reach agreement on their answers, which are then shared with

the entire class. Students are able to develop their own understanding of the subject matter based on previous knowledge, and can correct any misconceptions they have. Both teaching styles can lead to successful learning but it has been shown that students in the constructivist environmental demonstrated more enthusiasm and interest in the subject matter. In fact, repeated research has found that teacher-centered lessons can be less or non-productive, and in some cases, detrimental to the students' learning process. Many teachers are hesitant to try the constructivist model, because it requires additional planning and a relaxation of the traditional rules of the classroom [2].

Methodology

The goal of teaching is more than just the transfer of content from one person to another. The way that people are taught affects how and what students learn. Particular pedagogical approaches have been developed and refined to promote a variety of different kinds of learning: for example, learning of explicit content, learning of particular ways of doing things, or the learning of values and habits. This variety increases the decisions that teachers must make.

Frequently, teachers make choices about their pedagogy not based on their own preference but according to a local/national curriculum structure. Many curricula now include "core competencies", "transversal skills" or "general capabilities" which point towards certain kinds of pedagogy and provide alternative starting points for learning design. Some curricula are constructed to be "competency-based", with the idea that students should move through the development of different skills and knowledge levels at their own pace. Many of the so-called innovative pedagogies call for curricula where students take an active role in managing their learning; they are expected to develop the habits of metacognition in terms of knowing what one knows and what one needs to understand better. A curriculum may be more or less specified, so teachers may then have different scope

in the extent to which they or their students have choice about what knowledge to focus on.

Often the cornerstone of university teaching, a lecture can be an effective method for communicating theories, ideas, and facts to students. Typically a structured presentation, a lecture should be designed to include certain procedures in order to be effective-procedures that research and expert lecturers have identified as essential to assist student learning. The basic purpose of lecturing is the dissemination of information. As an expert in your field, you identify important information for the learner and transmit this knowledge in the lecture. The lecture method is recommended for high consensus disciplines-those in which there is agreement on the fundamental principles and procedures, such as professional courses for IT-specializations.

Advantages/Disadvantages

The following are the basic advantages of the lecture method: It provides an economical and efficient method for delivering substantial amounts of information to large numbers of student. It affords a necessary framework or overview for subsequent learning, e.g., reading assignments, small group activities, discussion. It offers current information (more up to date than most texts) from many sources. It provides a summary or synthesis of information from different sources. It creates interest in a subject as lecturers transmit enthusiasm about their discipline. There are disadvantages to using the lecture method as a primary teaching method. An effective lecture requires both extensive research and preparation and effective delivery skills to maintain students' attention and motivation. In addition, the lecture has other drawbacks: It does not afford the instructor with ways to provide students with individual feedback. It is difficult to adapt to individual learning differences. It may fail to promote active learning unless other teaching strategies, such as questioning and problem-solving activities, are incorporated into the lecture. It does not promote independent learning.

Planning a Lecture

How is a lecture planned and prepared? It is important to recognize that research findings and expert opinion have identified that certain teaching procedures should be included in a lecture. They are essential to an effective lecture-one that helps students to learn most easily and effectively. Based on learning theory, these procedures provide guidelines for preparing a lecture. An effective lecture is composed of three components, an Introduction, Body and Conclusion, designed to promote and support learning.

The Introduction usually is the first three to five minutes of the lecture. This time is crucial in determining how well students learn and retain the information to be presented. The main purpose is to provide a framework for students' learning, providing the structure for the lecture's content information. It is also necessary to gain students' attention. If we fail to capture students' attention during the introduction, it is unlikely that we will retain it during the rest of the lecture. The introduction should do the following: Establish a relationship with the audience. Make warm-up comments and initiate rapport to set the tone of the class. Establish friendly communication to provide a positive learning environment in which students feel comfortable. Use an "ice breaker" to introduce yourself during your first meeting with students and maintain an approachable relationship with students in subsequent classes. Gain attention and foster motivation. Relate to students' goals and interests. You might present a meaningful problem to students and describe the lecture as a solution to the problem. You might also introduce the lecture by describing how it will help students to be successful in their education and careers or by relating it to your students' inherent curiosity. Prompt awareness of relevant pre-existing knowledge. Students need to see how the "new" lecture information relates to their existing knowledge or experience. This not only promotes interest and motivation, but also is a first step in cognitive information processing. Clarify the purpose of the lecture and describe how it is

organized. Research supports a correlation between clarity of objectives and student achievement; students will achieve at higher levels if they know what knowledge and skills they should gain from this instruction. Announce the lecture topic as a title. Make a statement about the topic and how it will be developed. Make a generalization about the topic or simply list the objectives.

The Body of the Lecture covers the content in an organized way. Since this component is allotted the greatest amount of class time, it includes many more teaching procedures than the introduction and conclusion. This is where you must consult your lecture notes while at the same time maintaining rapport with your students. Lecture material is a combination of facts, concepts, principles, and generalizations. Concepts represent a class of terms (an idea usually expressed in a word), and principles communicate relationships among concepts. Generalizations are relationships between or among concepts expressed at a higher level of abstraction than a principle. In a lecture, the tendency might be to present one fact after another. This type of information giving is ineffective because students cannot see the relationship or organization of the new ideas. Instead, it is best to present a concept (one idea) by first defining it and then giving many concrete examples of the concept. As you introduce new concepts, link them together into principles, and then into generalizations, each time adding concrete examples as you develop these relationships:

— Examples of relationships that can be used to organize lecture information include the following.
— Component (part to whole)–shows how a larger idea is composed of several smaller ones.
— Material to purpose–information or a procedure is presented followed by its purpose or use (the "what" followed by the "why").
— Comparison–comparing two or more things using an explicit basis for comparison.

Use transition words as you present. Using transitions or links ("therefore," "because," "as a result") show how pieces of lecture informa-

tion relate to each other. Verbal or oral cues also alert students to more significant information:

It is especially important to remember...

Please note the following...

You will need to memorize...

I will ask you to recognize...

You should be able to apply...

— Remember to include audiovisual aids while delivering your lecture. Using Power Point slides, transparencies, or even the chalkboard will enliven and strengthen the presentation of ideas and, thus, assist students' learning.

— Include active learning It is crucial to provide opportunities for active learning during any instruction, including a lecture. Active learning allows students opportunity to practice using the lecture information and obtain feedback on the accuracy of their responses. For example, during the lecture, ask questions or give students problem-solving activities that encourage them to use the information they should gain from the lecture. You could encourage students to think actively during a lecture by announcing at the beginning of the class period that you will interrupt your lecture midway so that students may write a one- minute paper on a topic derived from the lecture.

— At the end of the lecture, you can use the "minute paper" by asking students to respond in one or two sentences to the following questions:

What stood out as most important in today's lecture?

What ideas from today's lecture are still unclear?

— Capture Attention. Maintain attention throughout your lecture by employing techniques such as the following:

— Vary student activities — lecture for 15 minutes and then provide an active learning activity;

— Change the mode of presentation (for example, oral to visual);

— Employ concept-related humor;

— Demonstrate enthusiasm about your subject;

— Encourage note taking by speaking slowly and repeating important information;

— Provide motivational cues ("On the next exam you will be asked to …").

The Conclusion, the most frequently neglected component of the lecture, should be used to reinforce students' learning of the information as well as to clarify any misconceptions regarding their understanding of the concepts presented. Try to do the following in your lecture conclusion: Repeat and emphasize main points. Signal students that you are going to summarize and reemphasize main points. Or, even better, have several students summarize your main points. This procedure will help you to get feedback as to whether or not students identified the important information. It is also helpful to rephrase information in order to clarify key ideas.

Encourage questions from students. To allow students time to review their notes and thoughts, pause for a few moments after asking for questions. Remember, however, that it is often difficult for students to respond to the vague "Any questions?" Instead, ask specific, leading questions. By doing so, you will encourage your students to review their notes and formulate questions of their own. In this way, any misconceptions can be clarified, and understanding can be reinforced.

Relate content to previous and subsequent topics. The last few statements in the conclusion should provide a connection between this lecture and previous lectures (as well as those to follow). As students see the relationship among major concepts presented in different lectures, they gain a sense of Lecture Delivery.

Nonverbal behaviors play a significant role in effective public speaking: they can enrich or elaborate the spoken message. There are basically two aspects to nonverbal behavior: body language and voice.

The following four elements make up body language:

Speaker-audience distance. The more objects and distance–psychological as well as physical–between speaker and audience, the more formal the atmosphere. If you desire to create a more informal atmosphere, you should reduce these barriers. Move from behind the lectern from time

to time and walk in the aisles as you present information or carry on discussions with students.

Body movement and stance. To communicate, you must compensate for distance by employing larger gestures and more volume. Body movement and posture can convey messages to your audience. For example, slouching communicates disinterest or boredom, pacing aimlessly with head down indicates nervousness, and standing stiffly indicates tenseness. Being animated during your lecture helps convey your own enthusiasm and interest to students; they recognize that you are not bored, nervous or tense.

Facial expressions. A significant portion of the emotional impact of a speaker's message is conveyed by facial expressions. Facial expressions tell students how you feel about them and yourself and give students cues to help them interpret the content of the message. Regular eye contact helps you establish credibility. Look directly at different individuals as though you were carrying on a conversation with them.

Gestures. Purposeful movements of the head, arms, hands and shoulders accentuate or dramatize ideas. Three characteristics of effective gestures include relaxation, vigor, and timing. Use your body to indicate a change of topic or transition. Voice variables allow the speaker to make a message clear and interesting. Some of the vocal characteristics of good speaking are as follows:

— Strength. Speak loudly enough so that the audience does not have to strain to hear.
— Enunciation. Make an effort to speak crisply, avoiding slurring or skipping parts of words in order to limit the possibility of misunderstanding.
— Pronunciation. Meet your audience's expectations in regard to acceptable pronunciation.
— Rate of speech. In a large lecture, with students concentrating on note taking, a rate of 120–130 words per minute is comfortable.
— Variety. Vary the characteristics of your voice in terms of rate, pitch, stress, pauses, volume and inflection.

— Pauses. Pauses can provide emphasis and allow students time to think and take notes. Furthermore, pausing indicates that you are a conscientious speaker who thinks about what you are going to say. However, filling in pauses with sounds like "um," "ah," "well-uh" make a presentation seem disconnected and can be distracting.

Additional hints for a successful lecture include the following:

1. Present an outline of the lecture (use the blackboard, overhead transparency or handout) and refer to it as you move from point to point.
2. Repeat points in several different ways. Include examples and concrete ideas.
3. Use short sentences. Stress important points (through your tone or explicit comments).
4. Pause to give listeners time to think and write.
5. Use lectures to complement, not simply repeat, the text.
6. Learn students' names and make contact with them during the lecture.
7. Avoid racing through the last part of the lecture. This is a common error made by instructors wishing to cram too much information into the allotted time.
8. Schedule time for discussion in the same or separate class periods as the lecture.
9. Preparation reduces stress, frustration, insecurity and consequent ineffectiveness.

Conclusions

Currently, five universities of the Republic of Belarus take part in Erasmus+ project "Modernization of Master Curriculum in ICT for Enhancing Student Employability in Belarus" (MaCICT) to modernize the existing ICT curriculum in order to enhance employability of ICT master

students and to foster entrepreneurship and establishment of SMEs in the ICT sector.

Each of the five Belorussian partners has approved a list of ten courses to be upgraded. Course programs have been revised and modernization has begun. Course structure and presentation style is chosen by the lecturer independently.

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THE ENTREPRENEURSHIP AND FINANCIAL LITERACY: DISTANT LEARNING COURSE DEVELOPMENT AND PILOTING UNDER THE FRAMEWORK OF ERASMUS PLUS BELL PROJECT

The course "Entrepreneurship and financial literacy" was developed under the framework of the EU funded ERASMUS+ project "Enhancement of Life-long learning in Belarus" (BELL). The course development was organized within the subject alliance, including 5 universities: Viciebsk State University named after P.M. Masherov, Brest State Technical University, Polack State University, Sukhoi State Technical University of Homel and Yanka Kupala State University of Hrodna. The initial reason for the course development was the demand for additional knowledge and skills among the adult population on the regional level, discovered by the project partners on the stage of project proposal preparation via the surveys carried out. Among the skills, which the community lacks, was the lack of personal finance management and entrepreneurial skills. So, the target audience of the course was set as the people of 30 years of age and above with specialized secondary education or non-economic higher education.

The course development was based on the tools and methods, provided to the Belarusian teachers by the EU partner universities. To acquire the necessary skills, knowledge and methods, within the project framework the subject alliance team has participated in several study visits. The key techniques, mastered within the project framework by the team members and used during the course preparation, were:

— joint course development, student centered approach in learning design (03.09–07.09.2018 study visit to Open University, Milton Keynes, UK);
— gamification of study process (22.10–26.10.2018 study visit to University of Cadiz, Spain);
— using social studies on the course preparation stage (26.11–30.11.2018 study visit to Carl Linnaeus University, Vaxjö, Sweden).

The course development was carried out in the period of September 2018 to April 2019. It was organized in a form of distant cooperation. The key instruments used were monthly skype-sessions, initial phone-calls, co-working with google.docs and communication via messengers (Viber, WhatsApp).

During the initial meetings, it was decided by the team to form a five-chapter course structure. Each chapter consists of 2–3 blocks, depending on the topic covered. The distribution of chapters between the partners and the chapters structure is shown in the Table 1.

The Aim of the Course, set by the partners, is to provide student with basic knowledge and skills of managing personal finance and entrepreneurship. The Tasks of the Course are the improvement of personal finance skills, getting initial entrepreneurial knowledge and learning basics of business development strategies. After course completion, students will be able to:

— Follow the algorithm of setting up a small business.
— Develop a business-model out of new ideas generated.
— Manage your family budget.

Table 1 — *Entrepreneurship and financial literacy course structure and distribution of chapters between the subject alliance members*

Chapter/ Alliance member	Chapter structure
Chapter 1. The essence of entrepreneurship and algorithms of setting up own business. *(Yanka Kupala State University of Hrodna)*	Block 1. The concept of entrepreneurship. *The nature and characteristics of entrepreneurial activity. Goals and types of entrepreneurship. Business climate.* Block 2. Organizational and legal forms of entrepreneurship. *Individual entrepreneurship: advantages and disadvantages. Legal entities: the organizational and legal forms.* Block 3. The procedures for creating business structures. *How to start your own business. Constituent document. The procedure for registration of business.*
Chapter 2. Business model development *(Sukhoi State Technical University of Homel)*	Block 1. Generation of business ideas. *Methods of generating business ideas. Formation of teams to work on business models. Business game "IdeaFishing" (offline).* Block 2. Development of business model canvas. *Minimum viable product. Consumer segment. "Lean startup". Method of Lean Canvas.*
Chapter 3. Financial resources for SME and personal finance management *(Viciebsk State University named after P.M. Masherov)*	Block 1. Small business. *Sources of financing for SMEs. Ways to mobilize financial resources for small, medium-sized enterprises and individual entrepreneurs. Fundamentals of accounting for SMEs.* Block 2. Personal Finance. *Inflation, the time value of money, insurance and credit. The family budget. Personal insurance. Consumer credit.*
Chapter 4. Business planning and risk-management *(Polack State University)*	Block 1. Business planning. *Goals, objectives and stages of business planning. Innovative projects. Recommendations for drawing up a business plan.* Block 2. Risk management. *Concept and classification of risks. Business project risk analysis and assessment. Basic rules of risk management.*

Chapter 5. Basics of Marketing and International Business *(Brest State Technical University)*	Block 1. Fundamentals of foreign economic activity in the field of SMEs. *The concept of foreign economic activity. Types of foreign economic transactions. Types of foreign trade documentation and rules of its registration.* Block 2. Customs and tariff regulation of foreign economic transactions. *Calculation of customs value. Types of customs duties and charges. Calculation of customs duties and charges.* Block 3. Fundamentals of marketing activities of small businesses. *The concept of marketing and marketing activities for small businesses. Conducting SWOT for a SME. 7-P analysis. Product promotion and sales promotion policy for SMEs.*

— Understand the basic concepts of small business finance.
— Prepare a simple business-plan taking into account basic economic risks.
— Understand the key aspects of foreign trade and marketing for small business.

After the review by the experts from European partner universities and course update, the enrollment campaign was launched. The first piloting of the course started in November, 2019 and lasted till March, 2020. The total number of students enrolled by 6 Belarusian universities, was 273. The number enrolled in each partner is shown in the Figure 1.

The statistics on students' activities on-line within the piloting period has shown, that the most active exploitation of the course was at the beginning and at the end of the piloting. The dynamics of students' activity is shown in the Figure 2.

One of the major recurring issues raised in both academic literature and the popular press is the consistently high dropout rate of on-line course participants. Although many thousands of participants enroll on these courses, the completion rate for most courses is below 13% (*Ohan, Sinclair and Boyatt, 2014*). For example, out of the 50,000 students who

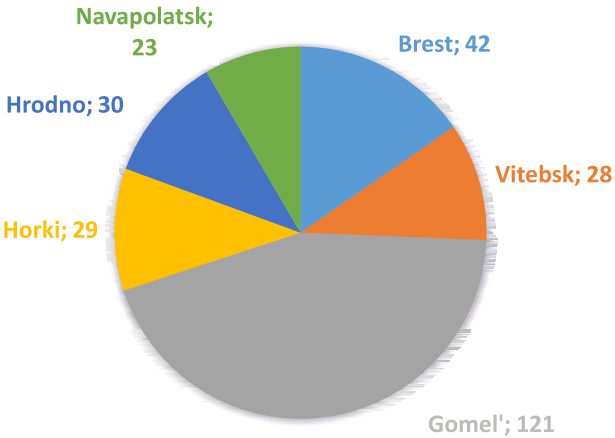

Figure 1 — *The enrollment of students for the piloting of Entrepreneurship and Financial literacy course*

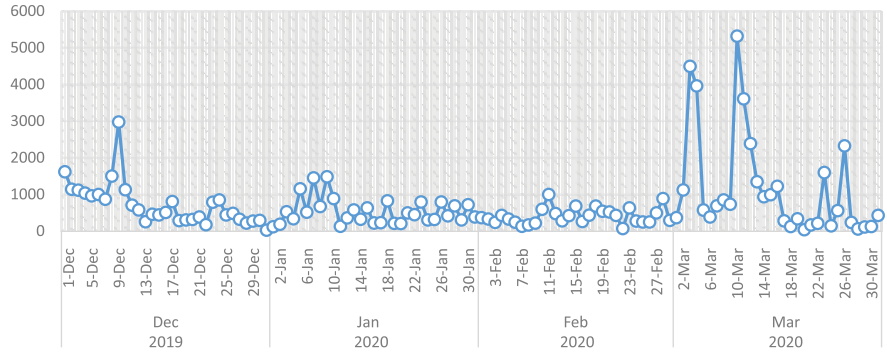

Figure 2 — *The dynamics of students' activities in the Entrepreneurship and Financial literacy course within the first piloting period*

enrolled for the Coursera-UC Berkeley course in Software Engineering, only 7 % completed the course *(Almandi, Sulfeeza, 2017).*

Usually, learners' participation seems to start dropping even from the very first week of attendance. Many attribute these low completion rates to lack of interaction *(Kopp & Lackner, 2014)* or to the fact that completion

is not important, as learners usually enter to look for a specific piece of information they need *(LeBar, 2014)*.

Speaking about the case of Entrepreneurship and financial literacy, we can say that approximately 30% of the students have successfully completed the course (Table 2) which is normal for the distant learning practice.

Table 2 — *The Completion rates of the Entrepreneurship and financial literacy course in the first piloting*

	Total number enrolled	Students with no tasks complete		Students with more than 10 tasks complete	
		No. of students	Share of students	No. of students	Share of students
Brest	42	14	33,3%	19	45,2%
Viciebsk	28	11	39,3%	7	25,0%
Homel	121	66	54,5%	28	23,1%
Horki	29	12	41,4%	7	24,1%
Hrodna	30	5	16,7%	10	33,3%
Navapolack	23	17	73,9%	7	30,4%
ALL HEIs	**273**	**125**	**28,8%**	**78**	**30,2%**

Students' interviewing and course developers' self-assessment allowed to formulate the following basic shortcomings of the course within the piloting:

— low motivation of students;
— inability to receive relevant feedback;
— time lags and limited possibilities for communication.

Speaking about the reasons of low motivation we can point out three major groups of enrollees, who failed to complete the course:

— enrollees with no expectations, not ready to study, give up course due to being bored;
— enrollees without skills to study, give up course due to insufficient instruction;
— enrollees with extremely high expectations, give up course due to insufficient quality of the learning material.

Despite the relatively high drop-out rate, which is obviously normal for such type of on-line courses, the developing team has received an invaluable experience and a set of skills for the future development of on-line courses. An important issue remaining is the sustainability of the course, which is intended to be used within a long period after the project is complete.

There are many benefits that institutions can derive from offering MOOCs. European institutions offer MOOCs to reach out to new students and creating flexible learning opportunities. This is in contrast for many US institutions that offer MOOCs to increase institutional visibility and drive student recruitment. The media often sees MOOCs as a new trend in education that with such publicity the institutions hope that they not only target alumni but go beyond traditional markets for wider participation and obtain marketing gains *(Chea, 2016)*.

In case of BELL Entrepreneurship and financial literature on-line course, our suggested sustainability strategy is as follows:

— Adopt the course as a MOOC by the partner HEIs;
— Make the course the experimental field for D.L.;
— Organize constant work on course content and design improvement:
  • Actively involve HEIs' students for ideas, design, content, tasks improvements to make the course more attractive;
  • Actively involve full-time students as tutors to mitigate the communication risks;
— Use the course to advertise the D.L.:
  • Offer access to course to wider public to promote distant learning at each of the consortium universities.

By doing so, universities of the consortium will further disseminate the up-to-date on-line teaching and learning tools and methods within the institutions and with other universities in Belarus and promote the life-long learning on the regional level, which is not only the objective of the BELL project, but one of the strategic aims of the Belarusian education system development.

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SOME ASPECTS OF THE ADDRESSEE FACTOR WHEN DEVELOPING E-LEARNING LANGUAGE COURSES

Introduction

In the modern world, distance learning (hereinafter — DL) meets the needs of information societies, corresponds to the concept of education throughout life, the necessity to stay on the cutting edge of modern discoveries. DL as a form of training suggests obvious advantages: flexible schedule, the opportunity of training anywhere, within the reach of any recipient. The development of e-learning courses is carried out in accordance with the principles of accessibility, ease, attractiveness, visibility, practical orientation. In this form of training, games, educational videos, and interactivity are widely used. Learning resources such as Kahoot, Socrative, videopresenter, timelines, instant polls, and many others lighten up the educational process, helping to create extraodinary and unique content.

In 2018–2020 distance courses in English for adults in Belarus were designed, the development team consisted of representatives from 6 Belarusian universities. The educational material is designed for 16 weeks, during which 8 thematic blocks are to be studied. Each developer had the opportunity to embody some creative ideas in organizing a certain

topic individually, as well as to make it blend in with the entire course. Thorough mutual reviews made it possible to identify some weak points timely and, if necessary, update the content. Regular Skype meetings have contributed to the progress of the whole MOOC course development process.

Before moving on to discussing some aspects of the course development, I would like to express my deep gratitude to the European organizers of the project, all experts, colleagues, coordinators of such an innovative event; for the opportunity to participate in the development of the first distance MOOC courses in Belarus, for all kinds of assistance and fruitful cooperation. I would also like to thank all copyright holders who readily allowed to apply the materials of their sites in our project. Special gratitude is expressed to graduate students of Yanka Kupala State University of Grodno, the Department of Translation and Intercultural Communication, specialty "Linguistic support of intercultural communications", A. Bodrenkova, M. Sinashenko, as well as their friends, native speakers of American English, who readily agreed to read the texts for the thematic block "Hobbies". Special thanks to L.M. Sereda, PhD in linguistics, working at the department mentioned above, who kindly agreed to take part in the training video for week 9. Thanks a lot to I.L. Kurbaeva, an excellent and tireless coordinator of many issues in the development of the entire English language course in the Republic of Belarus.

The linguocultural aspect of the addressee factor in the development of a DL language course

According to modern research by philosophers, logicians, linguists, cultural scientists, psychologists and other researchers of communication, especially those who study linguistic pragmatics, the speaker's ability to take into account the addressee's factor plays a key role in communication, since the content, form, nature of the message depends on the addressee, be it informal or formal communication, interview or book writing, learning situation, personal conversation or any form of

dialogue between entire cultures. N.D. Arutyunova justly notes: *"The addressee, like the speaker, enters into communication not as a global personality, but in a certain aspect, role or function corresponding to the aspect of the speaker"* [1981, pp. 357–358]. With a broad understanding of a dialogue, every consumer of distance learning is an addressee of the course developers. In the situation of learning a foreign language, the student acts, first of all, as a native speaker of a certain language and as a person belonging to a certain culture.

Taking into account the addressee factor, in our opinion, in order to increase the progress of learning when developing distance language courses, it is necessary to take into account the following important factors: 1) native languages of students; 2) the level of curricula complexity in secondary schools in the region of students; 3) the relative level of complexity of the terms used when explaining linguistic phenomena in a language course; 4) culture, customs and traditions of a learner's country. Taking these factors into account will allow the authors to make the most of these peculiarities when developing distance language courses in different geographic regions.

Let us ponder on the importance of these factors in the development of distance language learning courses.

First of all, it is to be mentioned that in traditional, full-time education, these factors are taken into account a priori, as something that is self-evident, corresponding to the basic didactic principles of connecting the new with the known, taking into account background knowledge, reliance on logical operations of comparison and analysis, etc. In distance learning, data accounting factors acquires special significance due to the fact that ignoring them inevitably leads to efficiency decrease of the learning process.

1) It is obvious that the typological structure features of the students' native language are in different proportions with the foreign language under consideration, which happens due to different degrees of the languages proximity. Therefore, distance language courses should not be designed in the same way for speakers of different languages. In a project

like ours, it is necessary to take into account the peculiarities of both English and Russian languages in the presentation, explanation, comparison, consolidation and application of the English language grammar, which cannot be done without using certain basic linguistic terms when explaining the grammatical phenomena. That is why, to my opinion, it is appropriate in certain aspects to be somewhat different from the presentation of the same material in Europe, since in Europe the listeners' native languages most often belong to the groups of Romano-Germanic languages, which makes English much closer to them genetically. That is why it is not always possible to simply use similar methods of introducing grammar, but it is necessary to adapt to distance language learning in Belarus some methodological approaches and techniques that have proven efficient in teaching English in the related regions where the native language of most students belongs to the group of Slavic languages. In particular, if we speak about Belarus, the native language of the vast majority is Russian.

Speaking about English and Russian, the grammar systems differ a lot. For example, to my mind, it is not quite efficient to explain the gerund without mentioning some basic part of speech terms, as well as the basic syntactic function terms, since it is the morphological features of a particular form that reflect the specifics of syntactic functioning in a sentence. Moreover, it should be taken into account that the gerund as a special morphological form in the Russian language is absent. As the syntax of a sentence reflects the logic of a statement, studying the main syntactic features of a particular phenomenon of a foreign language is closely related to the process of understanding and constructing specific statements when perceiving and generating speech.

Taking into account the fact that one of the guidelines in online courses development is the ease of presentation, we should ground the statement that one should not avoid using basic philological terminology when explaining foreign grammatical material, which corresponds to the level of an elementary general education school in the post-Soviet region. This is due to the fact that such terminology a priori does not

increase the level of complexity of presenting material for the students of our region, but at the same time it allows reflecting the essence of the phenomena presented. For example, in our opinion, when explaining the gerund to a Russian speaker, it is necessary to mention that this form has the properties of both a noun and a verb. This fact should be a starting point in explaining this phenomenon, which is absent in the Russian and Belarusian languages, and will also help to avoid cases of confusion with homonymous forms.

Factors 2) and 3) are closely related. It should be noted that when developing distance courses, to my mind, it is also necessary to take into account the differences in training programs in Belarusian and European schools. Perhaps the recommendation by European experts concerning the complete absence of terms when introducing grammatical structures is due to the relatively low level of complexity of educational programs in European schools comparing to Belarusian ones. It is common place that the curriculum of today's secondary school in Belarus can be characterized as a high level of complexity program, so the terms from primary school related to linguistics can by no means be perceived as causing difficulties. One can hardly imagine a high school graduate who does not know what a noun is, for example. In addition, such basic syntactic functions as subject, predicate, attribute, adverbial modifiers can also present no difficulty for a native Russian speaker, since he has encountered these terms since childhood when studying his native language at school. It means that the use of some basic linguistic terms is justified and expedient at all levels of teaching English, the significant similarities and differences with which students must be aware of.

4) As many researchers note, in the XXI century the time has come when the trends of globalization are complemented by the trends of deglobalization and regionalization. Today people do not so much want to merge into one common human civilization mass, which, as the experience of various social and political events in the international arena shows, is impossible, but today the peoples of the world are beginning

to realize the need and feel the value of preserving and expressing their cultural and historical identity.

The sphere of education today is considered by many researchers of humanity scholars as the sphere of spreading the influence of a certain culture, as a means of exporting certain values. Explaining the way of influencing personality through education, arguing the negative consequences of the presence of only the target language country culture in foreign language classes, E.G. Tareva (Moscow State University) remarks: "*The focus of teaching efforts solely on the culture of another country (...) sometimes leads to the fact that students (often involuntary) start thinking that the culture being mastered is not just unique in its own way, but exclusive and even superior in comparison with the culture of their native country*" [2016, p. 16]. This factor must be taken into account, including in distance learning. Consequently, when developing distance English courses, it is necessary to observe cross-cultural dialogue between different peoples having unique traditions and customs, emphasize their equal importance, their equality, and not follow the outdated monologue tendency of English textbooks to represent only the English-speaking culture, which today is considered a feature of the so-called "cultural imperialism". For example, when studying the topic of national traditions, the dialogue of cultures may be carried out through the presentation of one traditional English or American holiday and one of the traditional Belarusian or Russian holidays, because when communicating it is equally important not only to hear about what happens in another country, but also to learn how to talk about your native country that is unique in its way too.

Based on the results of the courses' first launch, it can be stated that some students are not too willing to do written assignments, communicate via forums and in chats. These circumstances are seen as points of growth when updating the content of the courses before their forthcoming launches. Perhaps a productive solution would be to use social networks, where communication is more personalized than via educational platforms.

Conclusions

The work on the project may be characterized as a successful, promising, interesting, and motivating event that gave all of its participants a fruitful experience, as well as the opportunity of contributing to the implementation of the lifelong education principle, to learning throughout life in the Republic of Belarus.

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OPTIMIZATION OF THE COURSE "MOBILE APPLICATIONS ARCHITECTURE AND DEVELOPMENT" FOR REMOTE LEARNING

Introduction

In the modern world, there are a huge number of mobile applications that allow you to communicate with friends, go online, watch the weather, etc. Many technologies are used to create mobile applications, which are updated and sometimes new ones appear. But one of the main problems is that inexperienced developers at the initial stages of development do not know the main stages of creating a mobile application, which sometimes leads to a loss of time and money.

To solve this problem, the course "Mobile applications Architecture and Development" has been developed, when studying it, it is possible not only to study new technologies, but also to restore previously studied material in memory. The general structure of training is shown in Figure 1.

When taking the course, you must learn the distinctive features of the mobile platforms Android, iOS and Windows Phone. Understand the principles and methods of building a graphical interface for mobile

applications. It is necessary to study in detail the mechanisms of interaction of user windows and methods of transferring data, as well as storing data using a given operating system. Be able to create and manage local databases, and use adapters to display data. Particular attention should be paid to the principles of secure access and data exchange between applications, as well as to pay attention to debugging, testing and reviewing a mobile application. The course plan and its detailed study (see Schema 1) for distance learning were created and deployed on the university portal Moodle, which in its turn was created in bounds of the learning process modernization inspired by the international project of EU Program ERASMUS+ CBHE, Enhancement of Lifelong Learning in Belarus/BELL(586278 –EPP-1-2017-1-LV-EPPKA2-CBHE-JP).

Course methodology

The course of studying "Mobile applications Architecture and Development" can be divided into 3 stages. At the first stage, the basic knowledge acquired at the first stage of higher education is repeated and consolidated, and knowledge in the field of mobile application development is improved. The main form of knowledge is interactive lecture, which discuss the information provided between the lecturer and students in the form of a dialogue. At this stage of training, online lectures and webinars are also provided. At the second stage of training, an individual technical task is compiled and issued, the result of which will be a ready-made mobile application on the topic of the dissertation. In the process of project implementation, practical classes (individual and team work), group and individual consultations, meetings are held and intermediate control is performed as a code review in a distributed system by Git versions. At the final (third) stage, a full code review is conducted by the course supervisor and/or the supervisor of the dissertation. After a positive feedback on the work done (completed project), the student is allowed to credit, which takes place in the audience and includes: project protection and test in the Moodle system [1].

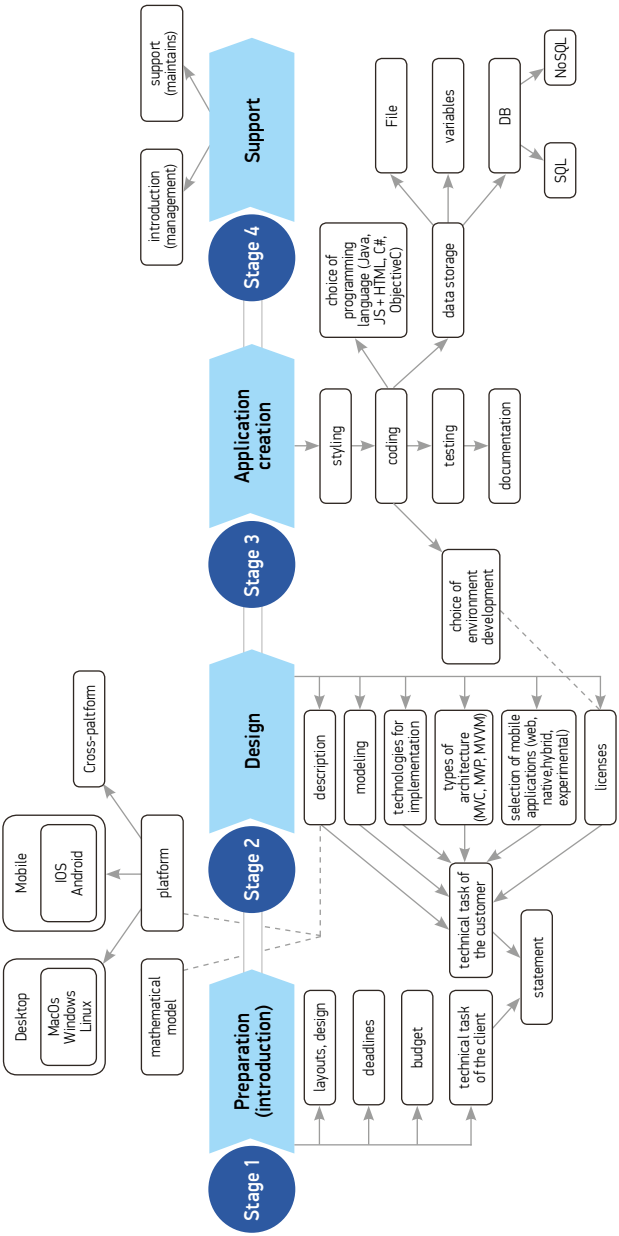

Figure 1 — *The structure of the course "Mobile applications Architecture and Development"*

Schema 1 — *General structure of the course "Mobile applications Architecture and Development" in Moodle*

	Title
	Syllabus
	Structure course
	Lecture 1. Introduction. Software design
	Lecture 2. Mobile software development
	Lecture 3. Principles of organization of access
	Lecture 4. Methods of data storage in Android OS
	Lecture 5. Notification and signaling mechanisms
	Lecture 6. Additional features for creating applications
	Laboratory work № 1
	Laboratory work № 2
	Laboratory work № 3
	Laboratory work №4
	Laboratory work № 5
	Project protection
	Course Final Test

Assessment Strategies

To assimilate the material and understand how much it has been studied, it is necessary to control knowledge, the formation strategy of which will be carried out using Bloom's taxonomy and assessment criteria [2, 3]. To form the final assessment, the following scoring system has been developed and proposed for implementation to control knowledge:

- a survey at lectures — a demonstration of knowledge with the ability to explain them in several ways with illustrative examples (20 %)

- Project implementation within the framework of laboratory work 65%):
  2.1 Development of application architecture (10%);
  2.2 Application implementation: coding (15%), debugging (5%), testing (5%) — this is an illustration of the knowledge gained in the process of studying a theoretical lecture course;
  2.3 Using a distributed version control system Git, for cross-reviewing (10%) — this is a check of the project on schedule;

3. Project protection (20%) and Credit: Test in system moodle.bstu.by (15%).

Conclusion

The training course "Mobile applications Architecture and Development" is designed to acquire skills in the development, testing and maintenance of mobile software. Knowledge of the course will allow:

— improve individual professional engineering level;
— to master the skills of using modern information technologies to solve research and innovative problems in the field of mobile technologies;
— create and solve tasks on Android or iOS platforms that can be applied and implemented in "real projects" on professional topics and business.

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TEAMWORK SKILLS DEVELOPMENT

Introduction

In accordance with modern realities, the industry has special requirements for the training of students, including the skills of teamwork on projects. This skill is relevant at any time, but now, because of the growing popularity of remote work (both in connection with coronavirus, and as a result of natural processes) there is an additional challenge — to develop it through remote learning and interaction.

To begin with, let's consider what skills students should acquire:

- understanding and application by trainees of the principles of division of responsibilities in the team based on the personal and professional qualities of each team member;
- correct setting of intermediate goals and deadlines for their implementation;
- code quality control, test coverage and error handling;
- ability to write code together (pair coding);
- analysis and evaluation of the result (total and stages), adjustment and reassessment of the next stage;

- to get knowledge and try in reality modern methods and techniques of development, testing, launch and maintenance of software products;
- connection between related disciplines.

That is, each student must gain knowledge and experience of the full cycle of software development (from brainstorming at the beginning, to the final presentation) [1]. Also, it is necessary to describe separately the requirements to which the chosen method of achievement of the above-described goals should correspond:

- the teacher's ability to monitor and correct (if necessary) the decisions made by students at each stage;
- evaluate each learner's contribution and make final grades;
- the complexity of the task must be sufficient to handle a multitude of related tasks (debugging, testing, launching, and maintenance);
- the ability of all team members (including the instructor) to work remotely while fully accomplishing the task.

Based on the above, there are two ways to organize students' work:

- complex of special interconnected laboratory works;
- one large-scale project for a long time.

Each of these methods has its own advantages and disadvantages. To determine the best, you must carefully analyze each of them.

Complex of special laboratory works

"Classic" laboratory works, in which each of them is designed to work on one particular aspect or area of knowledge, do not meet modern requirements for the learning process. Losing coherence, and most importantly, in this case it is difficult, or almost impossible, to establish competent teamwork between students because of the small amount of work required to perform a single laboratory. Also, in this case, it is impossible to single out separate roles for testers, devops-engineers, etc., so that everyone would get all the necessary knowledge and do the work [2].

In accordance with modern realities, the industry has special requirements for the training of students, including the skills of teamwork on projects previous. In this case, the above goals will be achieved in a more complete way, as part of the work may be devoted to additional topics.

For example, let us consider the plan of laboratory work shown in Figure 1. It is assumed that by the beginning of its execution, the trainees have completed and have the result of the previous work. Based on their results, the trainees have experience working with the proposed database and the software structure in which it is planned to use it.

It should be noted that, with this approach, it is extremely difficult to create conditions for each learner to fully work out the teamwork on a large-scale project.

A large-scale project for a long time

The second option is a project on which the group (team) of students will work together for a long time (the most obvious option is a training semester, or about 4 months). In the process of working on such a project it is possible to achieve all the goals in full.

It is this format that allows you to fully pass the path of software development from team analysis of the task and division of responsibilities, to the final presentation of the results of work and protection of the project; to identify and develop leadership and other personal qualities, communication skills and teamwork. The instructor can, at each stage, monitor the work and give necessary advice and guidance [3].

It is also possible and necessary to consider the connection of the discipline, within which the project is carried out, with related disciplines studied in parallel or earlier. In such situations, it is necessary to speak about the project component, which belongs to this discipline. When performing such work, students should separately demonstrate and defend the results of their work in each subject.

In addition, when working can be used one of the most common methods of project management, such as SCRUM, Agile, etc., in which

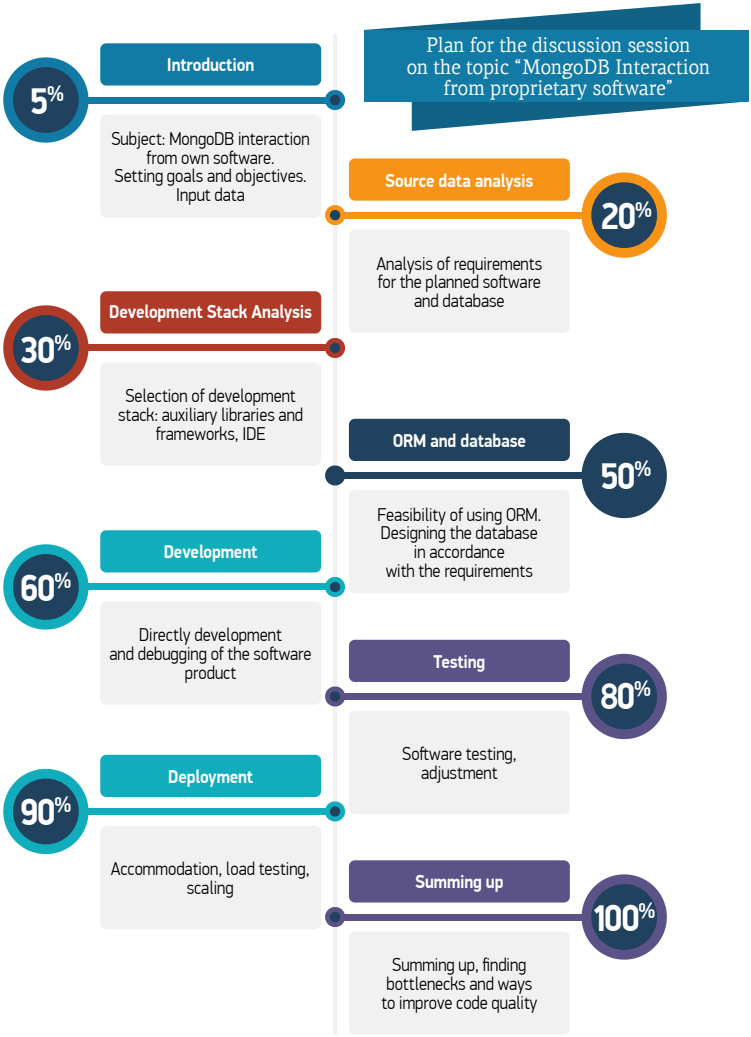

Figure 1 — *Laboratory work plan*

students themselves act as SCRUM Manager, SCRUM Development Team and the teacher act as SCRUM Product Owner.

Let us consider this approach on a concrete example for the discipline "NoSQL database".

Example of a team project in the discipline "NoSQL database"

The project plan is shown in Figure 2. It shows the plan of one of the components of the Magistrate's Team Project for "NoSQL databases" course, was developed at BrSTU for 2020/2021 magistrate students and deployed on the university Moodle portal, which in its turn was created in bounds of the learning process modernization inspired by the international project of EU Program ERASMUS+CBHE, Enhancement of Lifelong Learning in Belarus/BELL(586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP).

Non-relation database component in a group project of trainees

	Introduction	Configuring the database	Data change	Virtualization	Protection of the project
Discussion	— Setting goals and objectives, expected results; — Proposals for development tools (languages, IDE, version control system, testing, databases, cloud platforms)	Principles of data storage, user authorization	Ability to scale, restore, log all actions	Features of containerization, scaling, virtual machines	Methodology of "bottle necks" search
Controlled work	— Checking implementation opportunities; — Clarification of functionality and cost	Installation and configuration in GNU/Linux, authorization, server development	Interaction with the database from different NPS, CRUD, logging	Development in virtual machine, in Docker, using Mongo Atlas service	Justification of technical decisions taken, development of technical documentation
Results and adjustment	Changes in the stack and development principles	Optimized of requests, correct error handing	Comments, suggestions for optimization	Checking of correctness of work, optimization of requests	Load testing of the developed database

Figure 2 — *Team project plan*

The project goal is formed individually for each group depending on personal and professional qualities and acquired skills of each group. Since the group of trainees will be the team that will do the work, it is an excellent model of a situation where employees have to find an "approach" to other members of the group and will perfectly help develop communication skills. Combined with components from other disciplines, a fully completed project is the best way for a graduate to go the full software development path [4].

It should be noted that the complexity of the final goal of such a project (software) should be sufficient but not exceed some reasonable limit.

For example, the project implemented by one of the groups was a copy of www.booking.com website and service, but subsystems like payment processing and real interaction with hotels are not implemented.

Conclusions

Even a less useful model with a course of related laboratory work arouses additional interest among students, and the implementation of the project itself stimulates additional efforts. Moreover, it is possible to refer to participation in it at further employment.

All of this makes projects the most appropriate form of training for developing team skills, but it also provides additional moral incentives.

Moreover, according to personal experience, in several groups, where laboratory classes were replaced by a long-term project, the motivation and productivity of students increased. The desire to learn new, relevant technologies and techniques that are widely used today was stimulated.

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LINGUO-COGNITIVE MODELING AS A MODERN APPROACH TO DEVELOPING AN ENGLISH ONLINE COURSE

Learning a language is a complex cognitive activity that requires comparison between the familiar and new knowledge. Linguo-cognitive approach in teaching English aims at using a model with high cognitive value which develops and improves logical thinking and encourages imagination. According to this approach, language is a means of expressing semantic concepts that are the result of a person's perception of the surrounding reality and the processing of obtained information [1]. Lexical units are cognitively constructed units or concepts that represent objects reflected in our consciousness. At the same time, lexical units at a cognitive level may refer either to the objects in the real world or to the concepts in our imagination. Thus, teaching English as a foreign language we have to pay attention not only to the lexical or grammar aspects of the language but also to the cognitive side of the language acquisition. The main aim is to help a student transfer from a passive recipient to an active constructor.

Mastering a foreign language presupposes the formation of a different way of thinking, different from thinking in the native language which, in turn, is a complex psycholinguistic process. One of the indicators of foreign language proficiency can be attributed to the formed linguo-cognitive models.

Whereas, modeling as a universal property of human thinking is carried out on the basis of a number of cognitive models (thinking models). All cognitive models basing on their function can be divided into identifying-categorizing and synthesizing. Cognitive models of the synthesizing type allow creating mental models of objects that do not exist in the world, transform them into a goal and put them into practice. One of the basic mechanisms of cognitive activity is recognized as a language which is considered as a universal tool for receiving, storing, transmitting information based on linguistic structures correlated with cognitive thinking models. The linguistic implementation of cognitive models represents both already nominative knowledge and new hypothetical. Any knowledge is verbalized in the process of creating a text and in this process various linguistic structures are involved accordingly [2].

However, linguo-cognitive modeling cannot be carried out without a logical-semantic analysis of a text written or spoken as logical-semantic connections are established between elements of the text at different levels of its structure. The linguistic basis of logical-semantic analysis of the text considers the text as a whole. Relying on the familiar knowledge, a reader or a listener puts forward hypotheses, thereby modeling the possible development of events. Comprehension of the methods of logical-semantic analysis allows concluding that understanding the text is associated with the analysis of its architectonics ("skeleton", structure). The structure of the text and the structure of thought should always be correlated. When modeling a text, the starting point is the comprehension of logical-semantic connections, and then the verbal means of their expression are analyzed [2].

Learning a foreign language requires the students to overcome the cognitive habits. They have to reorganize encyclopedic knowledge and corresponding word association networks. It means that they use the existing knowledge selectively, analyze the patterns and work out new form-meaning pairs. This is the crucial condition for learning language through language use and it's the ideal to strive for in teaching the foreign language.

Implementing distance learning in the current epidemic situation is the best solution for the educational system in Belarus. However, Belarusian educational establishments are used to the traditional mode of teaching and learning (a classroom one) that makes the process of transition to the online form complicated. On the one hand, creating an online course requires special knowledge and techniques that not many of the teaching staff possess. But on the other hand, the students lack the culture of studying online. These are two main problems that we face when planning and developing our English course in the framework of Erasmus+ BELL project.

It should be noted that Brest State Technical University (hereinafter — BrSTU) actively participates in European programmes such as Eramus+ and is one of the partners of the project of Enhancement of Lifelong Learning in Belarus — BELL. Due to the project BrSTU teachers had an opportunity to undergo tutorials and workshops on various online tools (including Moodle)organized by European partner universities. Knowledge and skills gained helped to carefully plan the structure of the course, analyze the content, and choose the best strategy while developing the English course.

According to MoodleDocs, Moodle is a free, online Learning Management system enabling educators to create their own private website filled with dynamic courses that extend learning, anytime, anywhere. It has easy to use interface, collaborative tools and activities, and a track progress option. Moreover, it promotes a social constructionist pedagogy (which includes collaboration, activity-based learning, critical reflection, etc.) [3].

Taking into account the key elements of cognitive processes involved in language learning: comparison, categorization, pattern-finding and blending-Moodle platform allows a teacher to create a content that will embrace both the linguistic and cognitive aspects of learning. Presenting English tenses, for example, is not necessarily to be done in a form of a plain text. It is more effective to explain and memorize using schemes, tables, mind maps (Figure 1).

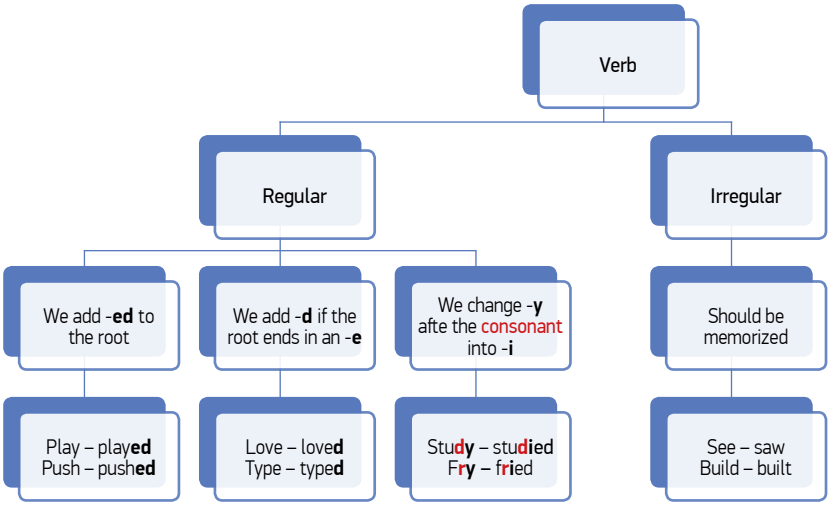

Figure 1 — *Presenting the Past Simple Tense in the form of the mind map*

Moreover, Moodle platform suggests adding various activities and resources that give diversity to the course. Tools for collaborative work such as workshop, wiki, chat, forum enable participants to express their opinion, interact with each other and see the language in use (Figure 2). The aim of the course is to minimize the role of a teacher; therefore, prompting students to practice the language in the situations of real communication. Linguo-cognitive approach to the development of the course allows the learner to understand how the language is used in different contexts. Expressing the message the learner would like to convey with a high degree of confidence in different contexts (home, school, work, etc.) enables him to fully understand the language structure and the appropriate to the situation discourse.

In conclusion, linguo-cognitive modelingis used to facilitate and regulate the process of learning. In the context of language learning, students who are proficient in this strategy demonstrate a high level of linguistic analysis and control. Therefore, it is important to foster the development of students' cognitive abilities as it helps them to control

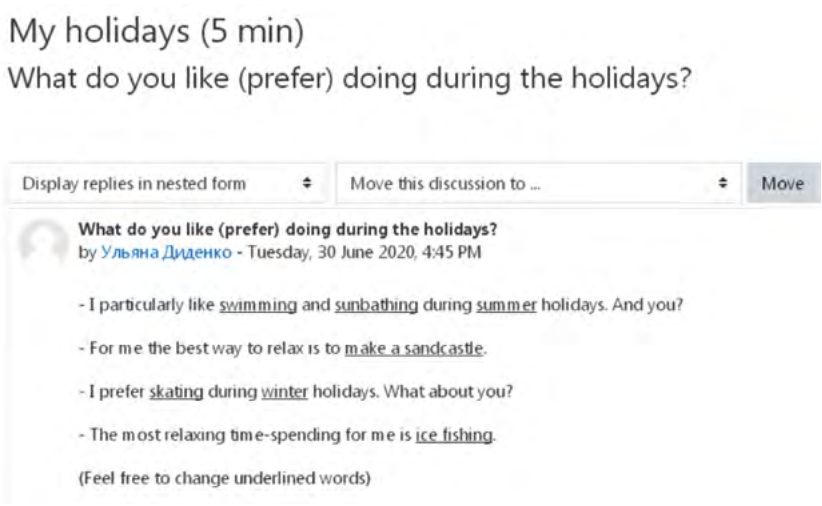

Figure 2 — *Setting an example of a small talk*

their skills and abilities of written and oral communication. It also helps students to thoroughly understand the meaning of the messages they are reading or listening to. These benefits undeniably affect student's success and are essential when learning a foreign language.

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CONSIDERING COGNITIVE LOAD AT DISTANT LEARNING

The hi growth of distant learning share in 2020 caused by the epidemiological reasons brought university lecturers in front of the urgent need to change the presentation approaches for the educational materials. An extremely large part of educational activities has been transferred to the online software — the special educational content management systems — and primarily to the Moodle system, as the most powerful and widespread among them. However, the interaction of students with the studied material through software requires the solution of additional design problems, and how successfully these problems are solved can have a significant impact on the effectiveness of the study.

When working with the software, the user experiences additional cognitive, visual, and motorloads. On the one hand, it is advisable to minimize such loads in order to less distract the user from the learning process. But on the other hand, reducing only the more mentally costly types of workload due to several additional typical actions (movement of the mouse pointer or clicks) as a compromise solution may be more optimal. Visual load can serve a similar purpose: for

example, it can purposefully reduce the cognitive load on the user (not having to remember all the options and choices), thereby reducing learning time. An example is the concept of the WIMP (windows-icons-menus-pointer) interface, within which the commands available to the user are collected in menus and controlled by the mouse cursor [1].

The term "cognitive load" was originally introduced in cognitive psychology to illustrate the load associated with executive control of a person's short-term memory. During the assimilation of complex information, the array of data and interactions that must be processed simultaneously can either underload or overload the final volume of the user's working (short-term) memory, and in the latter case, the existing content must be processed before meaningful learning can be continued [2]. The learning process is more effective when it relies on previously known information (the so-called "existing schemes"). The more information a person has to master in a short period of time, the more difficult it is to process this information in working memory. In this regard, the difference between teaching a subject in a native language versus the intense study of the same subject in a foreign language is indicative: the cognitive load is higher in the second case, since the brain must work on translating from a foreign language, while simultaneously trying to understand new information.

Another aspect of cognitive load theory concerns understanding how many discrete pieces of information can be stored in short-term memory before information loss occurs. In usability, this principle is known as "Miller's wallet", according to which a person is comfortable navigating among no more than seven objects of the same type [3] or even less. N. Cowan refuted this theory in 2001 and experimentally proved the volume to take 4±2 elements [4].

The methodology of cognitive load is used to determine the automation (controllability) of information processing. Unlike automated processes, controlled processes involve cognitive effort. This means that additional cognitive load will impair the effectiveness of the controlled

processes. Accordingly, it is assumed that automated processes will not be influenced by additional cognitive load.

Cognitive load theory provides empirically based guidelines to help redirect the learner's attention to information that is relevant to the subject matter. There are three types of cognitive load:

- *intrinsic cognitive load* is an unavoidable level of complexity associated with the material being studied. There is inherent complexity in all learning. This inevitable complexity cannot be changed, but many schemes can be broken down into separate "subschemes" that are studied in isolation and later put together and described as a whole. Particularly, Moodle provides several approaches to divide material into the number of related pages, such as *lesson* course element, which allows to create a graph-like structure of pages and small tests with conditional links between them.
- *extraneous cognitive load* is created by the form of presentation of educational information, and therefore it is easier to control it by the developer of educational materials. Since the cognitive resource is shared and limited, additional efforts to process the extraneous load generally reduce the amount of resources available to process intrinsic cognitive load and germane load (i.e., learning). Thus, especially when the intrinsic and/or germane load is high (i.e., when the problem is complex), information should be presented in such a way as to reduce the extraneous load. For example, requiring a learner to mentally integrate related sources of information that are located on different pages increases this type of load, and the opposite effect can be achieved if the learning material includes glossaries of terms which make explanation to pop-up if the appropriate highlighted word is clicked in the text. From the other side, learning material should have not to many interacting elements to avoid visual overload which increases this type of load as well.
- *germane cognitive load* is a load dedicated to handling, building and automating schemes. It was first described by Sweller, van

Merrienboer and Paas in 1998. Good example is providing students with interactive elements which involve them to self-explain the material, which may impose an additional cognitive load but it could be relevant to learning. Collaboration activities based on wiki and forum course elements may follow the same goal.

While intrinsic cognitive load is generally considered constant (although techniques can be applied to manage complexity through segmentation and sequential presentation), extraneous load and germane load are manipulable. It is assumed that extraneous load should be limited, and germane one should be stimulated. Therefore, it is relevant to search for ways to reconstruct teaching so that what would be an extraneous load was now directed to the construction of a scheme (germane load).

Finally, techniques are needed to find out whether the designer of educational materials was successful in the attempts to reduce the external cognitive load and redirect the attention of students to the cognitive processes directly related to the construction of schemes.

There are two fundamentally different approaches to measure cognitive load. Paas and van Merrienboer developed a construct known as the relative condition efficiency as an index of cognitive load, which researchers use to measure mental effort. This construct combines intelligence effort ratings with performance ratings. Following Paas and van Merrienboer, many researchers have used this and other similar constructs to measure how cognitive load relates to learning and teaching.

The ergonomics-based approach attempts to quantify the neurophysiological expression of cognitive load using standard measuring instruments. Until recently, the use of such approach was limited by the low prevalence and high cost of biometric equipment. Recently, however, a significant number of biometric sensor devices have appeared on the market for the fitness and entertainment industry. This category primarily includes optical heart rate sensors, developed for sports heart rate meters, and then spread first to fitness trackers, and then to personal digital assistants interacting with a smartphone in the form of a wrist-

watch (smartwatch). In addition, there are several entertainment devices that register brain activity to determine the user's concentration, or track the direction of the gaze. All these devices have several advantages: they are sufficiently accurate, suitable for continuous monitoring, capable of transmitting data to a personal computer, and at the same time, thanks to mass production, are widely available on the market.

For example, one of the simplest and most accessible ways to assess changes in cognitive load using biometrics is to use the built-in Attention metric of the NeuroSky MindWave encephalograph, simultaneously assessing the speed of work with the material and the presence of errors in the control tests built into the educational material [6]. An increase in concentration of attention with the same or longer duration of work will indicate an incorrect balance of types of cognitive load.

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EVALUATION OF CHOICE AT DISTANCE LEARNING ON THE EXAMPLE OF THE "INFORMATION SECURITY" COURSE

The importance of distance education and its networked software platforms in the modern world is steadily increasing. In such a study, the student acts not only as an active perceiver of the course, but also as an operator interacting with the software product. Based on this, it becomes necessary to take into account not only the traditional aspects of teaching, but also the ergonomic indicators of interactive teaching materials and their corresponding software interfaces. Optimization of this component increases the digestibility of educational material and reduces the probability of operator's errors.

Reducing the possibility of operator error as well as reducing the likelihood of extreme situations and reducing the risk factor are among the leading design features. If such a situation occurs, the object must correctly supply data about its state with feedback signals that will correct operational images and ensure the adequacy of subsequent actions [1].

Along the scheme of interaction between the operator and the system according to D. Norman [2], the processes of thinking take up most of the time of human-computer interaction. Consequently, higher speed of mental processes makes significant increase of the operator's speed. It is impossible to change the user's own speed of mental processes, but the speed of information processing can be increased by analyzing the factors that slow them down.

The speed and reliability of working with educational material can be determined by counting errors and measuring the time spent; however, this provides only an indirect objective assessment without understanding the origins of the problems and difficulties. Taking into account the subjective indicators of users, the developer of the distance course may receive additional information on these issues. These indicators include the level of expectation and the level of user satisfaction.

Satisfaction with a product is a subjective assessment of its quality; Let us consider in more detail the concept of quality of software products. J. McCall was the first to introduce the concept of "usability" as one of the quality factors of software products, as a combination of operability, training and communicativeness [3]. Usability has traditionally been measured based on metrics such as performance, productivity, and user satisfaction. However, only the first two criteria are sufficiently clearly operationalized and described in the specialized literature, but there is still no consensus regarding the understanding of the nature of satisfaction with a software product, its determinants and adequate research methods [4].

Satisfaction with the product, i. e. a high "subjective assessment of its quality" [5] reflects the personal attitude of the user to it. This attitude is formed on the basis of the previous experience of a person's interaction with a certain object, during which this person has repeatedly experienced states of comfort and satisfaction. Thus, in terms of content, satisfaction is manifested in a complex of positively colored emotionally-needful experiences [6].

Since satisfaction is the subject's feeling in relation to an object, it is not available for direct measurement by technical means, but it can be quantified. The following methods can be used to assess the satisfaction of interaction with the software platform:

- indirect methods for assessing satisfaction: statistical analysis of changes in the correlates of satisfaction, structured observation of the user's emotional manifestations, registration of psychophysiological indicators and oculomotor activity;
- methods of direct assessment of satisfaction: interviews, content analysis, subjective scaling and test questionnaires [3].

Additionally, it is necessary to note a problem that is relevant in modern conditions — the choice of a software platform in a set of competing platforms that are similar in functionality, but different in their interface design.

The problems of the relationship between human characteristics and the choice of software products were studied in the works of the following modern psychologists: S. Weinshenk, Alan Baddeley, John Barg, Susan E. Carey, Paul Ekman, Hyunjin Song, Tanya Chartlang, Serge Tisseron, Cloud Kado — they studied the relationship of memory phenomena, personality traits of a person and their relationship with a person's work with a computer and the level of stress experienced. However, in the works of psychologists in Russia and Belarus, this problem was not considered.

The purpose of this work is to identify and describe the types of choice "Information Security" course in the international project of EU Program ERASMUS+CBHE, Enhancement of Lifelong Learning in Belarus/BELL (586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP).

To achieve this goal, the following techniques were chosen:

1) ***Microsoft Desirability Toolkit***. The Microsoft Desirability Toolkit [7] consists of 118 cards with words describing the user's reaction to the program. After testing, participants are presented with a deck of cards and asked to select five words that best describe the software product they are using.

The advantage of this methodology is that it introduces a controlled vocabulary for the participants, avoiding the natural variability of word choice in an arbitrary form of qualitative assessment, which is problematic from a data analysis point of view. Collectively, the words encompass a wide range of possible responses to functions, ranging from the visual appeal of design and functionality to the user in general.

2) ***System Usability Scale (SUS)***. This scale was released by J. Brook in 1986. It was originally created for administration after usability testing on systems such as VT100 Terminal applications. SUS is technology agnostic and has since been tested on hardware, consumer software, websites, mobile phones, pre-recorded voice messaging systems [8], and more.

3) ***Post-Study System Usability Questionnaire (PSSUQ)***. This questionnaire is a research tool developed at IBM for scenario-based usability assessments. It includes 19 items designed to assess such characteristics of system usability as quick completion of work, ease of training, quality of documentation. This technique allows you to assess the level of satisfaction of end users after working with the system [3].

The results of the survey are summarized in Table 1.

Table 1 — *Summarized questionnaires data*

Test	Mark	%
SUS	A — excellent	11.11
	B — high-end	11.11
	C — good	0
	D — OK	0
	F — poor	77.78
PSSUQ	A — excellent	0
	B — high-end	0
	C — good	33.33
	D — OK	66.67
	F — poor	0

It can be seen that more than 77% of the participants had a rather negative subjective level of expectations from the "Information Security" course in terms of complexity, accessibility, etc. However, the objective (resulting) level of satisfaction with the course is characterized by a positive attitude towards it, and more than 66% participants successfully achieve the goals set for themselves when studying the course.

When comparing the data, we got a diagram that shows the distribution of types of choice among students (Figure 1) [9].

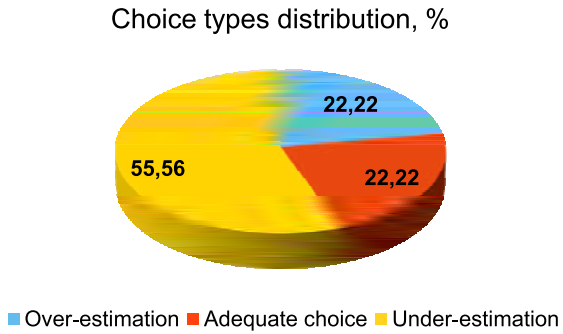

Figure 1 — *Choice types distribution*

As can be seen from the diagram, we have an underestimated type of choice (more than half). Both an adequate choice and overestimation are demonstrated by a quarter of the respondents. Analysis of the activity log in the Moodle system shows that when choosing "overestimate" the listeners performed work in the last deadlines, after a short rise (they started doing everything quickly, and then slipped behind the schedule). Those who demonstrated the "underestimated" choice did everything early and stayed ahead of schedule until the end of the work, or met it. The listeners who demonstrated adequate selection adhered to the schedule completely without sudden jumps.

MDT showed that those who underestimated initially thought the course interface was error prone and confusing. If overestimated, the resulting testing described the interface as "error prone", "uncontrollable"

and "time consuming". With the "underestimation" type of choice, the situation goes the other way (negative preliminary assessments were replaced by positive final ones). With an adequate choice, the estimates changed little.

It can be noted that those who underestimate the complexity and specificity of the course at the initial stage are weak in studying the course. And as a result of more independent activity than in traditional education, this category of participants loses interest and motivation. Therefore, for this category, it is necessary to provide additional motivating factors in the learning process. In particular, chats with a teacher and correspondence on forums can be considered as such.

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IMPLEMENTATION OF DISTANCE LEARNING ON THE EXAMPLE OF "BUSINESS PLANNING" BLOCK OF THE COURSE "ENTREPRENEURSHIP AND FINANCIAL LITERACY"

Today the worldwide Internet has firmly entered our life. Most of today's students actively use computers and the Internet in their lives and education.

During the period of rapid information growth, a specialist needs to study almost all their lives. Today the idea of the concept of "education throughout life" or Lifelong Learning leads to searching for new methods of transferring knowledge and learning technologies. The use of Internet technologies and distance learning opens up new opportunities for continuous training of specialists and their retraining, obtaining a second education, and makes the acquisition of new skills more accessible.

At the same time, the need for lifelong basic education or retraining is developing the potential for distance learning. A huge number of distance learning courses and entire distance learning universities have appeared in the world.

Distance learning can be viewed as a new stage in the development of both correspondence and full-time education, which provides the use of information technologies based on the use of personal computers, video and audio equipment, space and fiber-optic technology. The

main differences between distance learning and extramural education include [1]:

— constant contact with a teacher (tutor), the ability to promptly discuss emerging issues, as a rule, using telecommunications;
— the possibility of organizing discussions, joint work on projects and other types of group work during the course and at any time (in this case, the group can either consist of listeners living compactly in one locality or be distributed);
— transfer of theoretical materials to students in the form of printed or electronic teaching materials.

In turn, the main differences between distance learning and full-time education include:

— learning at the place of living or work, therefore, the distributed nature of the educational process;
— a flexible schedule of the educational process, which can be either completely free in open education, or be tied to a limited number of checkpoints (passing exams, online sessions with a teacher), or to group lessons, as well as laboratory work on equipment (possibly remote);
— contacts with a teacher (tutor), mainly through telecommunications.

It is important to note that distance learning is fundamentally different from traditional education in that it creates a new educational information environment, into which a student comes who knows exactly what knowledge, skills and abilities they need. It can also be considered that a distinctive feature of distance learning is the provision of trainees with the opportunity to receive the required knowledge themselves, using developed information resources.

Among the differences between distance learning and traditional education, there are a number of typical psychological and pedagogical problems that have to be solved by the teacher and students of distance courses [1]:

— difficulties with establishing interpersonal contacts between participants in the learning process;
— problems of formation of effectively working small study groups for cooperation training;
— determination of individual characteristics of the information perception among students and learning styles for a more effective organization of the educational process;
— updating and maintaining motivation for learning;
— matching the teacher's behavior to the methodology and pedagogical technology chosen for distance learning.

The following can be considered as pros and cons of distance learning.

The advantages of distance learning include [2]:

1. Technology — training using modern software and hardware makes e-learning more effective. New technologies make it possible to make visual information vivid and dynamic and to build the education process itself taking into account the active interaction of the student with the training system.
2. Accessibility and openness of learning — opportunity to learn remotely from the place of learning without leaving your home or office. This allows a modern specialist to study for almost a lifetime, without special business trips or holidays, combining with his or her main activity. At the same time, the emphasis is on training in the evenings and on weekends.
3. As a rule, distant learning is cheaper than traditional training, primarily due to reduced costs of moving, living in another city, reduced costs of organizing the courses themselves (no need to pay for classrooms, fewer staff, teacher costs can be reduced, etc.).
4. Freedom and flexibility, access to good quality education — new opportunities for choosing a course are emerging. Consequently, it is possible to choose several courses from different universities, from different countries. It is possible to study in different places and on different platforms at the same time, comparing courses with each

other. Studying anywhere at any time allows students not only to stay in their usual environment and keep up with the rhythm of life, but also to develop an individual study schedule. Distance education also provides the opportunity to combine learning with core activities.

5. Individuality of distant learning systems. Distant learning is more individual: the learner determines the pace of learning himself, can return several times to individual stages, can skip individual stages, etc. This learning system forces the learner to engage in self-study and to acquire self-study skills.
6. Documentation of the learning process — the learner can leave the course for themselves, email with the tutor, and can contact them later if necessary.
7. The use of modern Internet technologies and distance learning also makes it easy to form various virtual professional communities.

The disadvantages of distance learning include [2]:

1. Need for a personal computer or other device as well as Internet access. Necessity of permanent access to information sources.
2. High requirements for setting a training task, administration of the process, difficulty in motivating trainees.
3. One of the key problems of Internet training remains the problem of user authentication when checking knowledge. This problem is partly solved by installing video cameras on the training side and the corresponding software training side.
4. As a rule, trainees feel the lack of practical training. There is a lack of constant control over trainees, which is often a powerful incentive.
5. Insufficient computer literacy of trainees and trainees, lack of experience in distance learning, many teachers and students are not yet ready for this method of teaching, giving preference to classical education.
6. Training programmes and courses may not be well developed due to the fact that there are not many qualified professionals who are able

to create such training manuals today. There are not enough methodological materials for preparing and conducting distance learning. Creation of high-quality multimedia courses requires a team including a specialist in the subject area, an artist, a programmer, etc.

7. Insufficient interactivity of modern distance learning courses. Currently, lectures in the form of text materials and simple graphic objects (drawings, photos), knowledge control units in the form of test assignments form the substantive basis of the courses.
8. Low percentage of course completion due to insufficient experience in using distance learning systems and difficulty in motivating participants.

Distant education makes it possible to implement two basic principles of modern education — "education for all" and "education through life".

The features of distance learning can be considered on the example of the "Business Planning" part of the course "Entrepreneurship and financial literacy".

The course "Entrepreneurship and financial literacy" was developed by a consortium of Belarusian universities as part of the international project "Enhancement of Lifelong Learning in Belarus" (BELL) (586278-EPP-1-2017-1-LV-EPPKA2-CBHE-JP) of the Erasmus+ programme financed by the European Union. The course was placed on the Moodle distance learning platform.

The author of the article is a developer of the "Business Planning" part of the "Business Planning and Risk Management" section of the "Entrepreneurship and financial literacy" course. This part consists of 10 topics, a glossary, a list of literature, additional forms to fill in and a practical assignment. Part of the material in the block is used for the final test throughout the section.

Using Moodle has made it possible to streamline training and guide trainees in sequence from section to section, from unit to unit, from topic to topic. Moreover, it was not possible to proceed to the new sec-

tion without successfully completing all the tasks and the final test for the previous section.

Theoretical material is mixed with practical tasks, thanks to which it can be consolidated and learned to apply. Only one practical task is presented in the Business Planning block, which brings together all the theoretical information presented in this block. The topics in the block reveal the main sections of the business plan, ending with practical tasks for students to write their own business plan.

It is not rational for a teacher to check certain sections of the business plan in the form of practical tasks, as it is not possible to assess their correctness without reviewing the business plan as a whole.

At the same time, checking all individual business plans takes a long time for a teacher and may reduce the quality of the check.

According to the feedback from the students, the whole course and the block under consideration have turned out to be optimal in terms of the volume of theoretical and practical materials. However, further development of the course will be aimed at changing the volume and content of the blocks in order to facilitate understanding of the material and greater involvement of participants in the training process.

Further development of the course and the "Business Planning" section is linked to the following factors:

- multimedia — addition of video and audio materials, animations, graphics;
- interactivity — addition of tasks for practicing the skills of writing business plan sections;
- interaction with students — online communication sessions with students to explain theoretical material, conduct a workshop, answer questions, etc.;
- creation of tasks with automatic check-ups to save time for listeners and teachers;
- creation of a platform in Moodle for listeners to communicate with each other.

Further development of distant learning systems involves ensuring maximum interactivity. It is necessary to use a combination of different types of electronic communication, which makes it possible to compensate for the lack of personal contact through virtual communication.

Thus, the valuable practice of implementing distant learning on the basics of entrepreneurship and financial literacy course as part of the Erasmus+ international project made it possible to gain experience in running such courses and to identify areas for improvement.

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PRACTICAL EXPERIENCE OF DISTANCE LEARNING ON THE EXAMPLE OF THE COURSE "ENTREPRENEURSHIP AND FINANCIAL LITERACY" OF THE PROJECT ENHANCEMENT OF LIFELONG LEARNING IN BELARUS

The modern period of development of the life of society and the world economy is the establishment of an "innovative economy", the concept of which in the literature is often identified with categories such as "knowledge economy", "post-industrial economy", "information society", "high-tech civilization", etc. ... The main factors of production in an innovative economy are complemented by priority resources such as knowledge and information. The transition of modern society to a technological structure allows us to solve several basic problems that hinder education and self-development.

Distance education is becoming an increasingly popular form of education today. This form is convenient for people who live in remote areas, as well as for those who, for some reason, cannot attend full-time education. Training is available 24 hours a day at a convenient time, at an optimal pace for the student. Nowadays, e-learning and mobile devices allow

learning everywhere: at home and on the road, at work and on the weekends, etc. This learning process is characterized not only by the high autonomy of students, but also by the ability to collectively solve problems and tasks "without leaving home". Distance learning is popular among students who are just starting their careers and professionals who want to expand their competencies in a particular area. More and more organizations us online training in various professional areas, as it saves training costs and allows staff not to break away from the work process [1, 2].

Article 17 of the Education Code of the Republic of Belarus defines the distance form of education as: "a type of extramural education, when education is obtained mainly using modern communication and information technologies" [3, p. 18].

The Institute for Professional Skills Upgrading and Retraining of Yanka Kupala State University of Grodno is more and more actively implementing distance learning programs. Retraining of managers and specialists with higher education, professional development of specialists, internships are held by specialists employed in various sectors of the national economy. Distance learning allows the institute to organize more effective interaction of students with teachers in a convenient form at a convenient time. In addition, the distance form may be the only possible form in the implementation of educational programs for foreign citizens located outside the territory of the Republic of Belarus.

The research topic of the Department of Modern Technologies of Adult Education The Institute for Professional Skills Upgrading and Retraining has been associated with distance learning technologies in the context of additional adult education since 2014. [4] As participants in the international project "Enhancement of Lifelong Learning in Belarus" within the framework of the Erasmus + program, the teachers of the Institute had the opportunity to take part in educational events at leading European universities: Rezekne Academy of Technologies (Latvia), University of Cadiz (Spain), Linnaeus University (Sweden), The Open University (United Kingdom).

The generalization of foreign experiences of higher educational institutions in the use of distance technologies in the educational process

made it possible to improve the algorithm of the educational process in a distance form. Teachers of Yanka Kupala State University of Grodno took part in the development of educational programs based on modern distance technologies for courses: "English language", "Information security", "Legal literacy", "Entrepreneurship and financial literacy", "Energy and resource saving in everyday life".

The educational Internet platform of the project was filled with the developed electronic teaching materials for the courses, and since November 11, 2019, the courses have been implemented free of charge for everyone in the Republic of Belarus (Polotsk State University, Belarusian State Academy of Agriculture, Sukhoi State Technical University of Gomel, Brest State Technical University, Yanka Kupala State University of Grodno, Vitebsk State University named after P.M. Masherov). The courses were implemented for 3–4 months, as a result of which the listeners were issued certificates of the international project.

This article presents in more detail the experience of the participation of teachers of the Institute for Professional Skills Upgrading and Retraining of Yanka Kupala State University of Grodno, who took part in the development of the course "Entrepreneurship and financial literacy». The named course is very relevant in connection with the stimulation of entrepreneurial activity in the Republic of Belarus and is intended for everyone who wants to open their own business. The course includes 5 sections:

Section 1. Essence, types, organizational and legal forms of entrepreneurship. Algorithm for starting a business.

Section 2. Development of a business model.

Section 3. Financial resources and personal finance management.

Section 4. Business planning and risk management.

Section 5. Marketing and foreign economic activity.

Each section contains theoretical material, links to information in the public domain (official sites, videos on YouTube, etc.), practical exercises, tests, feedback. The recommended duration of studying each section is 3 weeks. At the end of the course, the student passes the final test, which includes tasks for all sections.

30 participants, including 20 women and 10 men, registered for this course at the Institute for Professional Skills Upgrading and Retraining of Yanka Kupala State University of Grodno. The duration of the whole training was 4 months. Figure 1 shows the categories of participants who signed up for the course: among them 3 people have a general secondary education, 2 people have a secondary specialized education, 26 — higher education. The age range was from 19 to 69 years old.

Various tools are used in the developed course in the Moodle distance learning system. Let's take a look at some of the tools used and their pros and cons.

Forums allow course participants (including teacher) to communicate in a manner similar to forums on Internet sites. The forum is a convenient way for you to ask questions and also to see what others have answered in the past. The forums also allow conducting thematic discussions within the framework of the training course: the teacher can ask a question, which will be asked to answer. You can also view the responses of other course participants (as opposed to individual assignments). In addition, the forum page displays its name, explanations, links to topics discussed. For each discussion, the list contains the topic, the number of replies, data about the authors and the dates of the first and last messages, which is very convenient for teacher-listener, listener-listener communication. When participating in a discussion on the forum, you must follow the rules of etiquette, as in any public speaking.

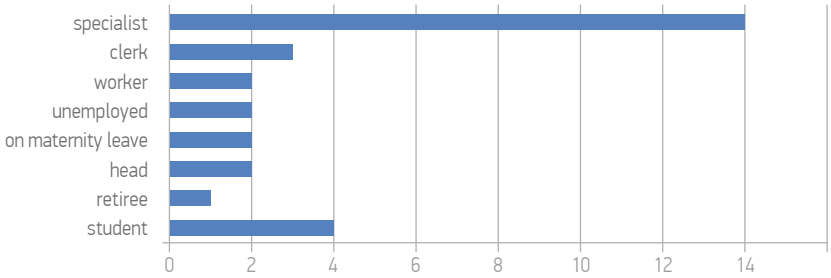

Figure 1 — *Social status of course participants*

The "Lecture" tool is a sequence of pages of educational material alternated with control questions (usually at the end of each page of the lecture). To go to the required lecture, the student should click on its title. After studying the material of the next page of the lecture and answering the control questions, the student can move to the next page (or return to the current one, depending on the correct answer) using the navigation button. This element is always available throughout the training and the listener can always return to the material covered.

An important part of the e-learning course was the test control of the assimilation of the material, as well as the practical tasks required for implementation. The Moodle system contains a wide variety of forms of knowledge test control tools. Depending on the settings, a time limit can be set for passing the test (after a specified period, the test is automatically closed and student answers are sent for verification). The instructor can also limit the number of test attempts. Also, the test can always be available, or only in a clearly defined range of dates and times. The order of the questions in the test and the order in which the answer options for each question are given can automatically change each time you try to take the test.

Control tools in the Moodle system are very important for courses, since after confirming the completion of the test, the student goes to the test results page and can make reflection. On the results page displays information about the test, your score evaluations. Evaluation is expressed in percentage (percentage of the maximum possible points). An analysis of the test results can also be shown there, correct and incorrect answers are indicated, and prepared comments can be made.

The Glossary tool in Moodle is essentially an electronic dictionary of terms. The main feature of this tool is that it can be filled by students themselves independently during the course. Having discovered a new concept (or having received a special task to fill out a glossary), the student creates a dictionary entry that reveals the concept or term (for this, a built-in text editor is used, similar to the one in which answers to "tasks in the form of text" are entered). Other course participants can comment on the

article, offer their own definitions, which forms and strengthens feedback, allows not only the teacher, but also the student to participate [5].

The participation of teachers in an international project in the process of developing a distance course "Entrepreneurship and Financial Literacy" gave important experience and additional pedagogical competencies. The following grounds were identified as the most significant and new.

First, in the process of developing each section of the training course, it is necessary to clearly define what types of activities the students will carry out during the study of each topic, as well as their percentage.

Secondly, the main task of training is not just to transfer a certain amount of knowledge to the student, but to directly acquire practical skills by them.

Thirdly, special attention should be paid to the content of theoretical material and practical tasks (not a very large volume, but at the same time sufficient to acquire practical skills that can be used in entrepreneurial activity) and the form of "presentation" of educational materials (to keep students interested in).

Fourthly, it is necessary to pay attention to the organization of feedback with students to obtain operational information about emerging problems and the possibility of an objective assessment of intermediate learning outcomes, operational adjustments of the educational process.

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IMPLEMENTATION OF NEW PEDAGOGICAL TECHNIQUES AND APPROACHES INTO UNIVERSITY: MEET STUDENTS' NEEDS AND NEW OPPORTUNITIES FOR THE TEACHERS

The modern strategy of teaching in higher education provides close cooperation between the student and the teacher in determining the goals of education and their practical achievement. This requires a high degree of readiness of both sides to adapt new pedagogical technologies, the ability to dynamically build a new educational strategy depending on the surrounding conditions. In this regard, it is of interest to consider what requests students have regarding the quality of teaching at the Brest State Technical University, what difficulties they face in the learning process.

In May 2020, the Brest State Technical University conducted a study "Student satisfaction with the quality of education at the university". The 3rd year students took part in the survey. The subject of the research

is the formed ideas of students about the organization of the educational process. Several answers were provided for individual questions of the survey. The general population was 709 people with a statistical significance of 95% and a confidence interval of 5%. The minimum sample size was 249 respondents. 451 students were interviewed (Faculty of Civil Engineering: 93 students, Faculty of Mechanical Engineering: 89 students, Faculty of Electronic Information Systems: 113 students, Faculty of Engineering Systems and Ecology: 88 students, Faculty of Economics: 68 students).

The results of the survey showed that despite the fact that more than a half of the students believe that the content and level of the taught disciplines meet modern requirements, more than 33% of students rather disagree with this statement, and another 4% of respondents expressed their complete dissatisfaction with the content of education.

Table 1 — Results of the survey

Do you think the content and level of the taught disciplines at your faculty corresponds to modern requirements?	%
Totally corresponds	12
Rather corresponds	51
Does not rather correspond	33
Does not fully correspond	4

At the same time, students appreciated the communication with teachers. To the question "Are you satisfied with the professionalism and competence of teachers?" 38% of the respondents chose the answer option "yes" and 49% "rather yes". In addition, almost all students (91%) noted a high level of trust in teachers and the level of relationship with them. A large number of respondents (77%) note the favorable atmosphere created at the university. Often in the responses it is noted that

while studying there is an opportunity for creative self-expression and development.

To the question "What do you get the most satisfaction from while studying at the educational establishment?" most often, students give the following answers:

— from relationships with fellow students — 56 %;
— from their educational results — 41 %;
— from relationships with teachers — 40 %;
— from the educational process as a whole — 39 %;
— from the opportunity to show one's abilities and skills — 26 %.

The particular interest is the students' answer to the question "what needs to be changed at the university to improve the quality of education". A free-form response was provided. In particular, the respondents offered the following answer options:

- *We need more experimental teaching methods, the latest knowledge in our specialties, prevention of cheating on exams;*
- *Adaptation of the educational process to modern market requirements is required;*
- *Use more modern approaches to training, add electronic materials and opportunities for remote access to them, provide relevant knowledge that is applicable in practice;*
- *Study the current requirements of employers to specialists.*

Thus, the contradiction becomes obvious, on the one hand, students are generally satisfied with the favorable environment at the university, they highly appreciate the level of teaching, but at the same time they are dissatisfied with the used conservative teaching methods and want to revise the content of education for its greater adaptation to modern requirements. To solve this problem, it is necessary to create an integral system of internal advanced training of teachers at the university [1]. This system should provide for the training of teachers in modern pedagogical methods and technologies. In addition, they should receive an up-to-date understanding of curriculum design.

In 2019, within the framework of the Erasmus+ programme "Strengthening the potential in higher education", the implementation of the project "UniTeLe — University teaching and learning enhancement" was launched designed for 3 years. This project is coordinated by Linneus University (Sweden). The project consortium includes 10 educational institutions from 5 European countries (Belarus, Germany, Italy, Turkey, Sweden). The project registration number is 598816-EPP-1-2018-1-SE-EPPKA2-CBHE-JP. One of the consortium participants from the belarusian side is BrSTU.

The overall goal of the project is to enhance the quality of higher education outputs with high-level student performance & employability by enhancing internal Quality Assurance (QA) for teaching/learning and improving professional performance of teaching staff at belarusian universities to optimise the response of HE to increased demands of society and economy.

The specific objectives are:

— to develop and apply internal QA system for teaching/learning and teaching staff performance with standards and procedures in line with ESG-2015;
— to establish Centres for Academic Development and Teacher Training at each belarusian partner to manage the internal system of QA for teaching/learning and teaching staff performance and university teaching staff training;
— to develop an in-service training programme for university teachers who need pedagogical training;
— to apply innovative methods of education for the increase in the level of students' academic performance and future employment;
— to run the In-service University Teacher Training Programme in the pilot mode;
— to analyse the pilot running of the Programme for follow-up activities;

— to introduce new regulations on teaching staff employment at the belarusian partner universities.

On the first stage of the UniTeLe Project implementation areas for improving the quality of higher education in Belarus were identified. SWOT analysis of higher education quality in Belarus and focus group of possible improvement were performed. The discussion was attended by work groups of 25 leaders, teachers and students from each of the Belarusian universities of the project consortium [1].

The use of various tools for advanced training of university teachers allows to prevent the occurrence of emotional and professional burnout, contributes to the achievement of high efficiency of the educational process, its orientation to the needs of a student.

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PHOTO MOMENTS OF THE PROJECT

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Study visit at Rezekne Academy of Technologies (Latvia). April, 2018

Coordination meeting at Belarusian State Academy of Agriculture (Belarus). May, 2018

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