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MoPED: Modernization of Pedagogical Higher Education by Innovative Teaching Instruments

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HANDBOOK

TITLE OF THE COURSE: *Digital tools in teacher's educational activities*

SPECIALITY - *013 Primary education, 014 Secondary education (Music Art),
014 Secondary education (Fine Arts).*

HIGHER EDUCATION DEGREE: *Bachelor*

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Faculty: *pedagogical*



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Abstract of academic discipline:

The training course is aimed at training students of pedagogical faculty (future teachers of primary classes) and development of digital competence in them. Training on the course assumes mastering by future teachers of a complex of digital technologies and digital tools for the organization of educational process on the basis of modern educational reforms.

In the process of training students are mastering cloud, mobile technologies, network blended learning technologies. Future teachers learn how to use the gained practical skills in the primary school educational process for all academic subjects; in the performance of practical tasks and working on the creation of their own digital products they learn how to be creative, pedagogical and developing creativity; they develop the ability to build the educational process on the basis of integrative, personality-oriented learning through the digital technologies in the preparation of lessons on all learning disciplines.

Students develop practical skills in using digital tools in their educational activities and acquire practical experience for planning, organising lessons and extracurricular activities with primary school pupils through the use of digital technologies.

The educational course provides for students gaining practical skills in using Google tools in educational activities (including: tools for developing the information educational space of the teacher, organising teamwork, communication and interaction, scientific research, etc.) and the usage of tools for visualisation of educational content, tools for creating interactive and creative tasks.

Keywords:

Digital, cloud, mobile technologies, Google digital tools, software, educational content visualisation tools, educational services, mobile applications, digital competency



CONTENT

1. Academic Discipline Description

1.1. Volume and distribution of discipline in ECTS credits according to the forms of educational process organisation and types of study: 3.0 ECTS credits. Number of content modules - 3

Number of content modules – 3

For full-time education: 8 lecture hours, 30 practical classes, 52 hours of consultations, and independent work for students;

For part-time education: 3 lecture hours, 10 practical classes, 77 hours of consultations, and independent work for students.

For Module I - 30 hours, 1.0 ECTS credits, Module II - 30 hours, 1.0 ECTS credits, for Module III - 30 hours, 1.0 ECTS credits.

1.2. Language of study: Ukrainian

1.3. Internet address of constant placement of educational content of the discipline:
<https://sites.google.com/view/pereyaslav-education>

1.4. Developers, working team

Coordinator: Ph.D. in Pedagogical Sciences, Professor, Dean of Pedagogical Faculty
Ihnatenko Nataliia

Workgroup:

Ph.D. in Pedagogical Sciences, Associate Professor, Head of Department of
International Relations Kovtun Oksana

Ph.D. in Pedagogical Sciences, Associate Professor Kondratova Liudmyla

1.5. Aim of studying the discipline: to improve the digital competence of participants in the educational process, to increase knowledge about the opportunities and application of digital technologies and digital tools in the educational process of primary school, to acquire skills and practical skills in the use of digital tools in educational activities, to acquire skills to create digital educational products, to develop the ability to use digital tools, web services, mobile applications for creating an information image development.

1.6. Program competences, which are formed in the process of studying the discipline:

Integral competence (IC)

IC-1 Ability to incorporate pedagogical and digital technologies into educational process by using modern digital tools.

IC-2 Ability to perform typical simple tasks in typical situations in a well-defined structured work or educational environment. Implementation of tasks under leadership with elements of independence.

General Competencies (GC)

GC-1 Ability to apply knowledge in practical situations.

GC-2 Skills of using information and communication technologies

Professional (special) competencies (PsC)

PsC -1 Ability to apply knowledge, skills and abilities from the cycle of professional-scientific disciplines is the foundation of content building in educational areas of the State primary education standard.



PsC -2 Ability to organize the process of teaching and learning with the help of digital technologies.

1.7. Discipline learning outcomes:

Professional knowledge:

1.To generate:

- knowledge of digital content and the basic digital tools of modern education;
- knowledge about how to use digital technologies and related digital tools for organizing the educational process in primary schools across all educational areas of the State Primary Education Standard..

2. Have knowledge about:

- technology for building the information and educational space for a modern primary school teacher by using Google tools;
 - methodology of conducting lessons for primary school pupils by using modern digital technologies;
 - purposes and forms of using Google Drive objects in primary school educational activities;
 - ability to use Google's mobile applications for collaboration between educational stakeholders;
 - technology for creating educational video content with the help of live YouTube tools and digital programs;
 - Possibilities of using interactive tools Padlet and Linoit in primary school teacher's educational activities;
- technology for creating virtual posters, infographics and other tools for visualising educational content via digital tools, web services and digital programs

Professional skills and abilities

- create an educational information space for primary school teachers using Google tools;
- simulate and plan the educational process with primary school pupils by using modern digital technologies;
- use Google Drive objects: documents, presentations, tables, images for educational collaboration and interaction;
- create and upload your own website with Google tools;
- use Google mobile apps for educational activities;
- create educational video content via YouTube live tools and digital programs;
- Create, fill and use Padlet and Linoit interactive whiteboards for work with primary school pupils;
- reproduce and interpret the acquired knowledge and practical skills in the educational process, demonstrate practical skills and acquired skills in practical educational activities based on communication, interaction, teamwork, partnership pedagogy.

Communication



- develop the ability to reproduce, demonstrate and interpret the knowledge and practical skills of Google tools in practical educational activities based on communication, interaction, teamwork, partnership pedagogy;
- gain practical skills of using Google Disk facilities for organisation of teamwork between participants of primary school educational process.

Autonomy and responsibility

- develop the ability of demonstrating in practice the acquired practical skills of working with modern digital tools;
- show creativity, pedagogical creativeness and develop imagination in the teaching of academic disciplines through integration with digital technologies;
- develop pedagogical experience in use of digital tools in educational activities and ability to demonstrate professional experience in educational extracurricular activities with primary school pupils;
- develop the ability to make responsible decisions about the newest digital tools.

1.8. Opportunities for the development of social / shared / common competences:

In case of successful study of the academic discipline, the student will be able to:

- 1) participate in a teamwork (discuss in a group the possibilities of building and implementing educational projects, justify the expediency of using reasonable digital resources in the educational process of primary school, present and argue their decisions, use digital technologies, modern digital tools and digital methods of teaching in the educational process aimed at developing digital competence among students);
- 2) use innovative teaching techniques (project method, methods of working in pairs, triples, research method, methods of developing critical thinking, mosaic method, discussion method, brainstorming method, generalization method, repetition method, case method, research method) in future professional activity;
- 3) to use theoretical knowledge on digital technologies and practical skills in using digital tools in primary school practice;
- 4) use the acquired skills and knowledge in the educational process of primary school in all academic subjects.

1.9. Students' Knowledge Control:

Evaluation for each meaningful module includes points for the student's current work in practical and seminar classes, for performing independent work.

Final evaluation is carried out in the form of an exam, which provides the performance of practical tasks and demonstration of an electronic portfolio filled with digital products prepared during the study of the discipline and the performance of test tasks, testing works.

Learning achievement is monitored by means of a survey during practical exercises.

The control of independent work of students is carried out by means of performance of written tasks, and protection of reference works.

Learning Assessment Tools: rubrics, grading scale, checklist, test, ratings, sequence improvement, priority lists, tables (Z-X-D-Y), scorecards, checklists, discussion questions, student observation, forms, questions, diaries.

90-100 points - perfect (A) Excellent (excellent performance with few mistakes)



82-89 points - good (B) Very good (above average with a few mistakes).

75-81 points - good (C) Good (generally correct execution with a certain number of mistakes)

67-74 points - satisfactory (D) Satisfactory (good, but also significant).

60-66 points - satisfactory (E) Sufficient (fulfilment satisfies the minimal criteria).

35-59 points - unsatisfactory (FX) Weak (with possibility of re-crediting).

1-34 points - unsatisfactory (F) Weak (with mandatory re-course).

Criteria for evaluating the completed tasks in the first substantive module (35%), in the second substantive module (25%), and in the third module (40%).

For I module evaluation IC-1 (5,8%), IC-2 (5,8%), PsC-1 (5,8%), PsC-2 (5,8%), GC – 1 (5,8%), GC – 2 (5,8%), for II module evaluation IC-1 (4,2%), IC-2 (4,2%), PsC-1 (4,2%), PsC-2 (4,2%), GC – 1 (4,2%), GC – 2 (4,2%), For III module evaluation IC-1 (6,6%), IC-2 (6,6%), PsC-1 (6,6%), PsC-2 (6,6%), GC – 1 (6,6%), GC – 2 (6,6%).

Final evaluation of the sum of all acquired competences: IC-1 + IC-2+ PsC-1 + PsC-2 + GC – 1 +GC – 2

| Module | Competencies | Current estimate | | Final assessment | |
|-------------------|--|--|--|--|--|
| I module (35 %) | IC-1 IC -2 PsC -1 PsC -2 GC – 1 GC – 2 | 5,8% 5,8% 5,8% 5,8% 5,8% 5,8% | IC -11,6% PsC - 11,6% GC - 11,6% | 5,8% 5,8% 5,8% 5,8% 5,8% 5,8% | IC -11,6% PsC - 11,6% GC - 11,6% |
| II module (25 %) | IC -1 IC -2 PsC -1 PsC -2 GC – 1 GC – 2 | 4,2% 4,2% 4,2% 4,2% 4,2% 4,2% | IC -1-8,4% PsC - 8,4% GC - 8,4% | 4,2% 4,2% 4,2% 4,2% 4,2% 4,2% | IC -1-8,4% PsC - 8,4% GC - 8,4% |
| III module (40 %) | IC -1 IC -2 PsC -1 PsC -2 GC – 1 GC – 2 | 6,6% 6,6% 6,6% 6,6% 6,6% 6,6% | IC -1-13,2% PsC - 13,2% GC - 13,2% | 6,6% 6,6% 6,6% 6,6% 6,6% 6,6% | IC -1-13,2% PsC - 13,2% GC - 13,2% |

2. Content and structure of the academic discipline

2.1. Content module 1 Modern Google digital tools in educational activities

2.1.1. Theme 1 Development of the modern primary education information space for teachers by using Google tools



2.1.2. Aim and expected results:

Provide knowledge about modern educational space of the primary school teacher, to use it in school practice, to provide practical skills in using Google tools for creation of information educational space of the modern primary school teacher, to acquaint with technical possibilities of Google Networks for educational materials placement of the teacher. As a result of working on the topic of knowledge about the development of educational space of a modern primary school teacher, the understanding of its practical use in the work, the ability to demonstrate the acquired practical skills and abilities to develop a student's website, which will be used in further training for the placement of all digital products for the training course.

2.1.3. Assessment criteria and forms of learning outcomes on the topic

Formative assessment in the process of practical work of the lesson: assessment of the process of practical work on the site, the level of performance, creativity, ability to work in a team, interact.

Summative assessment is conducted on the basis of the results of practical work, class, evaluation of independent work, evaluation of website quality, its content and design, quality of all digital products, the level of development of skills in using digital tools in teaching and school practice.

For assessment of the training results on the topic it is used an oral survey (knowledge of theoretical material on the materials of the lecture), a written survey test survey based on Google Form to test the knowledge acquired by students, to verify the quality of creation and design of the student's website is used by an ongoing individual assessment of the point.

The current control is carried out at each seminar, practical / laboratory lesson and on the basis of the results of independent work tasks.

2.1.4. Digital tools:

Google Websites, Google Pictures, Illustrations, Photos, Videos, Google Documents and Presentations.

2.1.5. Innovative learning technologies

Training technologies, integration technologies, technologies for the development of critical thinking, problem-oriented, personal learning, blended learning technologies, interactive learning technologies, scientific methods, explanatory, practical, creative teaching methods.

In the process of studying the topic the space of educational and cognitive activity is used; the organization of mobile educational places, which are easily transformed for pair and group work; space for recreation. In order to study the topic it is necessary to have the newest multimedia (demonstrative) teaching aids, high-quality individual teaching aids (gadgets), availability of Internet connection..

2.1.6. Lecture

Educational information space of a modern primary school teacher

The concept of " educational information space", the requirements for the formation of a single information educational space of the institution, the formation of individual information educational space of a modern teacher in the context of educational reforms, the goal, objectives, structure and stages of development of information educational space of a modern primary school teacher, the effectiveness of the use of



information educational space in school practice. Personal website of a primary school teacher: tasks, objectives, domestic experience of its use in the activities of a primary school teacher.

2.1.7. Practical exercise

Primary school teacher's personal website: tasks, purpose, content component.

Preparation for a practical training course on creating a personal teacher's website, studying the technical capabilities of Google Sites, the use of Google tools to the creation of educational information space of a modern primary school teacher. Stages of organizing the work on creating a personal website of primary school teacher. Viewing the capabilities of the site for placing digital products for the training course.

2.1.8. Topics of individual and/or group tasks

Technology for creating a personal website for the primary school teachers.

Individual work on the creation of the site: creating pages of the site, work on the design of the site, the publication of the site, getting the address of the site. Consideration of technical possibilities, revision of the main tools, rules of placement of materials, requirements to the format of materials to be placed on the site, practical work on filling the pages of the site.

2.1.9. Student self-study assignments

Improvement of future teacher's personal website.

View personal websites and electronic portfolios of primary school teachers on the Internet. Viewing educational video materials. Individual practical work on the design of the information educational space of a student - future teacher of primary school. Improvement of the site, filling the site.

Work evaluation methods: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey using Google form (tests on the topic to test the level of acquisition of practical skills of students to create an individual educational space for teachers).

The independent work of a teacher is assessed according to the following criteria: cognitive - the level of digital competence within the topic; practical-activity - the level of development of practical skills; reflective-evaluation - the level of development of skills to assess their own activities and the results of their own practical work and the work of other students, as well as the ability to present the results of practical activities.

2.1.10. Methodological materials and guidelines

In the course of studying the topic at the lecture session it is important to reveal the topicality of the topic, consider its importance in the light of modern state educational reforms and motivate students to perform practical and independent work with high quality.

When organizing a practical lesson, it is necessary to pay attention to the detailed description of the stages of work in creating an individual information educational space for students. By the example of personal website development it is necessary to demonstrate the effectiveness of selected digital technologies and practical importance of created digital products, which allow to demonstrate the level of development of digital competence of a student. Special attention should be paid to the semantic content



of the information educational space of the student, emphasis should be placed on methodical aspects of teaching, the expediency of drawing up a methodical backup moneybox, coverage of practical experience, own educational achievements and the like.

Independent work is carried out on an individual educational trajectory, during which students acquire the skills of self-educational activity. This type of activity allows to demonstrate the level of development of creativity, the depth of disclosure of pedagogical problems, quality and expediency of the content filling of the educational environment, the level of development of creative potential of the student.

Methodological recommendations and advice for students

In the process of studying the topic, students have access to teaching materials and presentations on the topic of the lecture class. In order to perform all practical and seminar lessons, students are provided with access to presentations, visual aids, educational videos, a list of literature and examples of personal websites of primary school teachers, as well as detailed instructions on how to perform practical types of work on creating and maintaining a personal website of the student.

Recommended resources of information (including electronic resources)

1. New Ukrainian school. Conceptual foundations of secondary school reform: URL: <http://mon.gov.ua/%D0%9D%D0%BE%D0%B2%D0%B8%D0%BD%D0%B8%2020%2016/12/05/konczepczyia.pdf>
2. Morze N.V. ICT Competency Model for Teachers / N.V. Morze, I.P. Vorotnykova // Scientific Journal «ScienceRise: Pedagogical Education». 2016. №10 (6). C. 4-9.
3. Creation of educational environment for modern educational institutions of Ukraine: materials of the International Scientific and Practical Conference / Under general ed.. H. A. Kolomoiets, O. M. Melnyk, S. M. Hrytsai, A. V. Vozniuk (c. Kyiv, March 15, 2019). Sumy NVV KZ SOIPPO, 2019. 124 p.
4. ICT Competency Framework for Teachers. UNESCO Recommendations (2011) URL: <https://iite.unesco.org/pics/publications/ru/files/3214694.pdf>
5. Tverezovska N. T. Kasatkin D. Y. Educational and information environment: history, classification and functions. National Pedagogical University of Ternopil. Pedagogy. 2011. № 3. C. 190-196.

2.1.11. Topic 2 Google tools for educational planning, communication and collaboration

2.1.12. Aim and expected results:

to provide knowledge about the possibility of using Google tools in the process of planning educational activities in the primary school environment, to acquire practical skills and abilities to communicate and interact in the educational process; to provide practical skills and abilities to organize planning educational activities using Google Calendar, the use of Google Hangouts to organize pedagogical communication and interaction, gaining practical experience in setting up Google Mail, installing additional functions for it. The results of work on the topic includes knowledge on the



use of Google tools in the process of planning educational activities, understanding the types of educational planning based on Google Calendar, the practical use of the calendar in practical work, the ability to demonstrate the acquired practical skills and abilities to plan educational activities using Google Calendar, and the ability to use Google Hangouts for communication as well as pedagogical communication and interaction in future work.

2.1.13. Evaluation criteria and forms of learning outcomes on the topic

Evaluations in the process of practical training: evaluation of the quality of practical work on the creation of individual educational plans, the level of development of creativity, the level of skills and abilities to work in a team, interact.

Summative assessment is based on the results of practical, class, assessment of students' independent work, evaluation of the quality of prepared plans, their content and design, the quality of preparation and organizing webinars with digital tools, the quality of e-mail configuration and installation of additional functions of e-mail, the level of ability to use digital tools in teaching and school practice.

For assessment of the results of training on the topic is used an oral survey (knowledge of theoretical material on the lecture materials), a written survey test survey based on Google Form for verification of knowledge gained by students, to test the quality of planning by using Google Calendar and the quality of video communication based on Google Handgouts using existing individual assessment.

The current assessment is carried out at each seminar, workshop/laboratory lesson and on the basis of the results of self-study tasks.

2.1.14. Digital tools

Google Email, Google Hangouts, Google Calendar, Google Search, Google Websites.

2.1.15. Innovation in learning technology

Training technologies, integration technologies, technologies of development the critical thinking, technology of focused training, interactive technologies of training, scientific, heuristic, search methods of training, method of reasonable tasks, verbal, visual, practical methods.

In the process of studying the topic the space of educational and cognitive activities is used to organize pair and teamwork, as well as space for recreation. For studying of a theme it is necessary to have multimedia (demonstrative) means of training, qualitative individual means of training (gadgets), Internet connection presence.

2.1.16. Lecture

Electronic educational planning, communication and interaction between participants through Google tools

2.1.17.1 Practice session

Usage of the Google Hangouts app to communicate and interact with participants in the educational process.

Explore the possibilities of the Google Hangouts application in the educational process. Communicate and collaborate with learners through Google Hangouts. Practical work on creating an online meeting in Google Hangouts with the contacts of your choice.



2.1.17.2 Educational planning through Google Calendar

Customisation of notification of educational events, automatic publication of events by e-mail, granting access for sharing with various subjects of educational process, possibility to create several calendars, their synchronisation. Algorithm for embedding the calendar on a personal website. Practical work on embedding the calendar on the website.

Features of implementing calendar planning for primary school subjects with the help of Google Calendar. Practical work on creating a calendar and thematic planning for the discipline.

2.1.8. Topics of individual and/or group tasks

Individual or group work on educational electronic process planning by means of Google Calendar: technical possibilities, educational functions, practical use in educational process. Setting up synchronization of all devices (computer, smartphone, tablet). Acquaintance with the interface and features of Google Calendar application. Access for editing.

2.1.19. Student self-study assignments

Independently familiarizing yourself with e-learning tools

Independent acquaintance with the possibilities of using the "flipped class" principle in educational activities.

Introduction to the electronic journal and the electronic diary, their use in the educational activity of the primary school teacher, the principles of electronic tables and graphs of pupils' progress: viewing examples, review of the experience of use. Using Google Class Tools for Students' Distance Learning: browse examples, review usage experiences.

Individual students' work on creating a calendar of educational events for the selected academic subject. Self-study work on creating a Google class. Filling the environment with educational materials, creating tasks for various academic subjects.

Methods of work evaluation: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey with the help of Google form (tests on the topic in order to test the level of acquisition of practical skills of students to create an individual educational space for teachers). The independent work of a teacher is assessed according to the following criteria: cognitive - the level of digital competence within the topic; practical - the level of development of practical skills and abilities, performance of practical types of work; reflexion-evaluation - the level of development of skills to assess their own activities and the results of their own practical work and the work of other students, as well as the ability to present the results of practical activities.

2.1.20. Methodological materials and guidelines

In the course of studying the topic in the lecture session it is important to reveal the relevance of the topic, to consider the benefits of electronic planning with Google Calendar, to demonstrate the domestic experience of using electronic planning in the educational process of primary school, as well as pay attention to the importance of communication and interaction between participants in the educational process in the



light of modern educational reforms and see the experience of interaction through Google tools.

In the process of individual work, students not only learn to create a calendar of educational events for a selected subject with a typical primary school curriculum, but also practically test the advantages of its use. It is expedient to unite students into pairs or threesomes when organizing independent work, directing their activities to obtain quality practical results. In the process of creating an educational environment Google Class should pay attention to filling the environment with quality educational materials, practical development of an algorithm for creating tasks from different subjects, with students performing two roles: the role of a curator - the organizer of distance learning and the role of a student (student) who studies in the classroom and performs the task. It is precisely this type of practical testing that provides an opportunity not only to gain a positive experience, but also to acquire practical skills to work with this Google application.

Implementation of these independent tasks allows to demonstrate the level of development of creativity, the depth of disclosure of pedagogical problems, quality and expediency of the content filling of the educational environment, the level of development of creative potential of the student.

Methodological recommendations and tips for students

While studying the topic, students have access to teaching materials and presentations on the topic of the lecture class. To perform all practical and seminar lessons students have access to presentations, visual training tools, training videos, a list of literature and examples of electronic planning using Google Calendar for primary school teachers, as well as detailed instructions on how to perform practical types of work on creating calendars, and planning educational events.

Recommended resources of information (including electronic resources)

1. Osipa R. IT in education: a training manual / R. A. Osipa. Kyiv. :Milenium, 2005. 78 p.
2. Semerikov S. O. Fundamentalization of Informatics Education in High School: [Monograph]. / Serhii Oleksiiiovych Semerikov; academician, scientific editor APN of Ukraine, Prof.. M. I. Zhaldak. – Kryvyi Rih : Mineral; K. : NPU n. M. P. Drahomanova, 2009. 340 p
3. Rashevskia N. V. Mobile learning software tools [Electronic resource]/ Rashevskia Natalia Vasylivna // Information technology and learning tools. – 2011. № 1 (21). URL: <http://journal.iitta.gov.ua>

2.1.21. Theme 3 Usage of Google Drive sites for collaborative educational activities

2.1.22. Aim and expected results:

Provide knowledge about the possibility of using Google tools in the educational process of primary school on the examples of Google (documents, presentations, pictures) and Google Forms and the use of these tools to carry out collaborative educational activities with the participants of the educational process; acquire practical skills to create Google Documents, Google Presentations, Google Pictures, acquire practical experience in creating surveys and tests using Google Forms, to work out joint collaboration between the participants of the educational process, to develop



a common understanding of Google Forms, and to develop a common understanding of Google tools.

The topic has resulted in knowledge of using Google (documents, presentations, pictures) and Google Forms in the educational process of primary school, understanding of using teamwork with common online Google documents and presentations in the editing mode, ability to demonstrate the acquired practical skills and abilities to create, edit Google documents, presentations, pictures in the preparation of primary school pupils' lessons, ability to create Google Forms for questionnaires and survey of students at the beginning of primary school.

2.1.23. Evaluation criteria and forms of learning outcomes on the topic

Formative evaluation in the process of practical training: evaluation of the quality of creating surveys and questionnaires with the use of Google Forms, substantive content of Google documents, presentations, pictures and level of performance, creativity, assessment of teamwork, quality of interaction.

Summative assessment is carried out on the basis of the results of practical training, assessment of the practical part of independent work, quality assessment of prepared Google documents, presentations, pictures, common digital products, surveys and questionnaires.

To assess the results of the lecture we use oral, written and test surveys based on Google Forms to test the knowledge acquired by students. To check the level of practical skills in creating, editing Google documents, presentations, pictures is used ongoing formal individual assessment. Such current control is carried out at each seminar, practical / laboratory lesson and by results of performance of tasks of independent work.

2.1.24. Digital tools

Google Docs, Google Presentations, Google Images, Google Forms, Google Sites.

2.1.25. Innovative learning technologies

Training technologies, technologies for the development of critical thinking, issue-specific, personally-oriented learning, interactive learning technologies, explanatory-illustrative, exploratory, practical, reproductive, problem teaching methods.

In the process of studying the topic the space of educational and cognitive activity is used to organize individual, pair and group work; space for recreation. For studying a theme it is necessary to have the newest multimedia (demonstrative) means of training, qualitative individual means of training, presence of Internet connection.

2.1.26. Lecture

Objects of Google Drive in the educational activities of primary school teachers

Google Drive objects: overview of educational opportunities, expediency of using for filling a personal website, giving examples of their use in the educational process of primary school. The overview of possibilities of sharing objects in Google Drive for the organisations of teamwork and interaction in educational process of primary school. Advantages and effectiveness of using Google Disk objects in the activity of a modern primary school teachers.

2.1.27.1 Practice session

Google Form in education



Google Forms in the educational activities of modern teachers. Practice work on creating a survey and questionnaires with the help of Google Forms. Group practice for students to fill in the Google Forms. Setting up a Google Form, Google Form design, sharing, receiving the form's e-mail address. Possibilities of the application to get general results of the survey and survey: classification of answers, diagrams, their use in educational process.

Practical work on the integration of prepared Google Forms and the general results of the survey, the survey on the personal site of the student.

2.1.27.2 Google Drive objects usage in primary school education process

Practice individual work at creation of Google Documents, Google Presentations, Google Pictures, design of practical workings out, algorithm of video embedding, images in Google Presentations.

Practice work in groups, pairs or three at creation of joint applications Google (documents, presentations, pictures), development of shared algorithm on editing, viewing on digital products, examples of use of joint teamwork in primary school educational process practice. Practical development of teamwork. Presentation of ready-made digital products.

2.1.28 Students' individual work assignments

Individual work on the creation of applications Google (documents, presentations, pictures), Google Jamboard, developing the algorithm of sharing for editing, viewing examples of teamwork in the practice of educational process of primary school.

2.1.29. Student self-study assignments

Improvement of work with Google applications: documents, presentations, tables, drawings in educational process

Student individual work on Google Docs, Google Presentations, Google Spreadsheets, Google Forms for Primary School Lessons (for the selected subject). Preparation of materials for placement on student's personal website.

Pair work of students on creation of joint Google Documents, Google Presentations, Google Tables in online mode (for the chosen subject).

Independent paired work of students when filling out Google Forms. Placement of joint digital products on student's personal website.

Work evaluation methods: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey with the help of Google Form (tests on the topic to check the level of students' practical skills and abilities when creating an individual educational space of the teacher).

Teacher's independent work is evaluated according to the following criteria: cognitive - the level of digital competence within the topic; practical-activity - the level of development of practical skills; reflective-evaluation - the level of development of skills to evaluate their own activities and the results of their own practical work and the work of other students, as well as the ability to present the results of practical activities.

For evaluation of lecture results we use oral, written and test surveys based on Google Forms to test the knowledge acquired by students. To check the level of practical skills



from the experience of working with Google objects uses a current ballasting individual assessment. The current control is carried out at each seminar, practical / laboratory lesson and on the basis of the results of independent work tasks..

2.1.30. Methodological materials and guidelines

In the course of theme studying in lecture employment it is important to open an urgency of a theme, to consider advantages of usage of Google Disk objects in practical educational activity, it is important to consider expediency of individual and joint work on creation of Google Disk objects.

During the lecturing lesson it is important to stop on expediency and efficiency of joint use of objects Google to the Disk which strengthen team activity, will help to develop practical skills of students, to cooperate with other teachers, pupils, parents. It is important to demonstrate the existing domestic experience of using joint teamwork, as well as to discuss the benefits of communication and interaction between participants in the educational process in the light of modern educational reforms, browse the sites, the experience of interaction through Google tools.

In the course of the practical training it is necessary to pay attention to the expediency and necessity for using Google Documents, Google Presentations, Google Tables in the process of preparing lessons within the school practice, as well as in the preparation of educational activities with primary school students, where materials are prepared to help to visualise the content of the event, etc.

It is important to remember that independent work on the topic is carried out on an individual educational trajectory. In the process of individual work students are interested in the quality of prepared materials, in the future will be posted on a personal website.

In the process of working together on the creation of shared Google Docs, Google Presentations, Google Tables, you should pay attention to the expediency of preliminary allocation of the volume of practical work on the creation of joint materials, definition of the role of each of the participants and responsibility for the quality of the prepared materials.

Methodological recommendations and tips for students

In the process of studying the topic, students have access to the teaching materials of the lecture class. For performance of all practical and seminar lessons students have access to visual training means, training videos, examples of educational Google Documents, Google presentations, Google tables used in work with pupils of primary school, and also recommendations for students on algorithm of creation and editing Google documents, Google presentations, Google tables are given. All practical and seminar lessons should have detailed instructions on their implementation.

Recommended resources of information (including electronic resources)

1. Bykov V. Y. Information systems for maintaining scientific and educational activities based on a cloud of oriented services / V. Y. Bykov O. M. Spirin M. P. Shyshkina. *Problems and prospects of forming a national humanitarian or technical elite.* Kiev, 2015. C. 93-121.



2. Bykov V. Y. Open web-oriented monitoring systems for the implementation of scientific and pedagogical research results / V. Y. Bykov O. M. Spirin, L. A. Luparenko. *Theory and practice of managing social systems*. Kiev, 2015. *Op. 1*. C. 3-25.
3. Bykov V. Y. Spirin O. M. Pinchuk O. P. and others. Information-analytical material to the parliamentary hearings. Reforming the information-communication technologies and the development of the information space of Ukraine: the ITPN of the Ukrainian Academy of Sciences, 2016. 15 p.
4. Havrilova L. H. Topolnyk Y.V.V. Digital culture, digital literacy, digital competence as contemporary educational phenomena. Information technologies and learning tools. 2017. ex. 5 (61). C.42. URL: <https://www.kmu.gov.ua/ua/npas/pro-zatverdzhennya-derzhavnogo-standartu-pochatkovoyi-osviti>.
5. Recommendations from the round table. Educational policy in the information society. [Approved by the decision of the Committee on Science and Education of the Parliament]. May 24, 2016. URL: http://old.apitu.org.ua/files/Recomendations_education.pdf.
6. The New Ukrainian School Concept URL: <https://www.kmu.gov.ua/storage/app/media/reforms/ukrainska-shkola-compressed.pdf>.
7. Lytvynova S. H. Projecting a cloud of educational environment of a general education institution: a monograph. Kiev: Comprint, 2016. 354 p.
8. Cloud services and technologies in scientific and pedagogical activities: Methodological recommendations / Y. H. Nosenko M. V. Popel M. P. Shyshkina / for the ed. M. P. Shyshkinoï. Kyiv : IITZN NAPN Ukraine, 2016. 73 p.
9. Digital competence of the modern teacher of the New Ukrainian school: a collection of theses dop. obsc. science. O. E. Konevshchynskoi O. V. Ovcharuk. Kyiv.: Institute for IT Means of Education APS of Ukraine, 2018. 61 p.

10. Shyshkina M. P. Formation and development of orientated educational-scientific cloud of higher education institution: monograph. Kiev: UkrINTEI., 2015. 256 p.

2.2. Content module 2.

Google Digital Mobile Tools in Education

2.2.1. Theme 1 Google Mobile Apps in Primary School Teacher Education Activities

2.2.2. Aim and expected results:

to provide knowledge about the possibility of using Google mobile applications in the educational process of primary school, their educational functions, the possibility of using them to organize joint interaction of the educational process participants, research and organization of game activities in the educational process; to acquire practical skills in educational planning, implementation of notes with the help of Google-Keep, acquire practical experience in creating individual routes with the help of Google Maps, by the following means.



Work on this topic resulted in the acquired knowledge of educational opportunities of Google-Keep, Google Maps, Google Art Culture, Google Expedition, Google Explorer, Google Earth, understanding of the practical use of Google applications in the preparation of lessons for primary school students, the ability to demonstrate the acquired practical skills and abilities to use these applications Google to develop lesson development in various subjects of primary school.

2.2.3. Criteria and forms of assessment of learning outcomes on the topic

Formative assessments in the process of practical training: assessment of the quality of text, voice and photo-tagging in the application Google -Keep, the quality of individual routes to historical places in Ukraine based on the application Google Maps and the level of performance, creativity, evaluation of teamwork, quality interaction. The cumulative assessment is carried out on the basis of the results of practical training, assessment of the level of preparation of the practical part of independent work, quality assessment of prepared materials and lists of links to materials for lessons and after-school educational activities for primary school based on mobile applications Google Art Culture, Google Earth, assessment of the level of practical part of independent work on writing lesson notes, using mobile applications Google Expedition, Google Explorer and others.

An oral, written, and test survey based on Google Forms is used to evaluate the lecture's learning outcomes. To check the level of practical skills based on the experience of working with mobile applications Google uses a current ballasting individual assessment, the current control is carried out at each seminar, practical / laboratory lesson, separately assessed the performance of tasks for independent work.

2.2.4. Digital tools

Mobile applications: Google -Keep, Google - Maps, Google Art Culture, Google Earth, Google Expedition, Google Explorer.

2.2.5. Innovation in learning technology

Training technologies, integration technologies, critical thinking technologies, personal learning technologies, blended learning technologies, interactive learning technologies, mobile technologies, explanatory-illustrative, research, search, practical, reproductive, heuristic methods of learning.

2.2.6. Modern teacher's Mobile Space lecture

Consideration of educational possibilities of Google applications and their use in educational process of primary school, educational functions of applications, possibilities of use of mobile applications Google for the organisation of joint interaction of participants of educational process, viewing of examples of application Google Expedition, Google Researcher for realisation of simple researches and the organisation of game activity in educational process with pupils of primary school. Virtual and augmented reality in the educational process, viewing of opportunities and educational functions.

2.2.7. Practice session

Google -Keep mobile application in the activities of a modern teacher



Practical development of using Google -Keep mobile application in educational process. Practical work (individual or paired) on creation of text, voice and photoreports, notes of Google -Keep tools.

2.2.8. Themes for individual and/or group tasks

Google Maps mobile application in the activities of a modern teacher

Individual, group (pair) work with smartphones and tablets by using mobile applications. Individual practical work on creating individual routes with Google Maps, developing lessons or educational activities using the mobile application Google Maps.

2.2.9. Student self-study assignments

Improvements to mobile applications Google-Keep and Google Maps

Practical self-independent individual and pair work with the purpose of perfection of work with application Google -Keep, creation of an individual lay-out of educational events in the form of plans-texts, voice reminders, creation of photoreports about educational events or photojournal about measures within a month at school. Development of lessons and scenarios of educational activities using the Google Maps application. Watching the educational video. Placing notes on sites (screenshots of planning events, etc.). Preparation of materials for placement on the student's personal website.

Methods of work evaluation: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey using Google form (tests on the topic to test the level of acquisition of practical skills of students to create an individual educational space teacher).

The independent work of the teacher is evaluated by the following criteria: cognitive - the level of digital competence within the topic; practical-activity - the level of development of practical skills; reflective-evaluation - the level of development of skills to assess their own activities and the results of their own practical work and the work of other students, as well as the ability to present the results of practical activities..

2.2.10. Methodological materials and guidelines

During the lecture it is important to stop on expediency and efficiency of using mobile applications Google as a kind of individual creative activity of the teacher. It is important to pay attention to advantages of occasional use of these applications at some lessons or educational activities. It is necessary to pay attention to consideration of educational possibilities and viewing of domestic experience of introduction of elements of virtual and added reality in educational process, even with pupils of primary school.

It is important to demonstrate the results of using planning educational activities and preparing photo reports using the Google -Keep application. In the course of the practical training it is necessary to pay attention to the expediency and necessity of using Google mobile applications in the process of preparing lessons within the framework of school practice, as well as in the preparation of educational activities with primary school students as a kind of innovative form of work in the framework of educational reforms.



Google's virtual travel applications can be used for visualising lesson content, as well as to demonstrate the impact of students' educational activities to their parents and the like.

Work on the topic yourself with an individual self-learning plan. The practical skills acquired can be applied to the teacher's daily work, as well as in the preparation of reporting documents, materials for online communities, etc.

While working on creating personal routes using Google Maps application, one should pay attention to the gravel types of images in maps: 3-D, satellite, individual routes with marked trajectory, etc.

Guidance and advice for students

Students have access to the teaching materials of the lecture class to study the topic thoroughly. For all practical and seminar lessons students have access to visual learning tools, training videos, examples of practical work with mobile applications Google - Keep, Google Maps in educational activities with primary school students. Recommendations on the algorithm of work with mobile applications are given to students. All practical and seminar sessions should have detailed instructions on their implementation.

Recommended sources of information (including electronic resources)

1. Kuzmenko (Vorozhbyt) A. V. Electronic portfolios for education applicants. Digital competence of a modern teacher of a new Ukrainian school: theses of reports of participants of the All-Ukrainian Workshop (Kyiv, February 28, 2018). Kyiv .: Institute of Information Technologies and Means of Education of APS of Ukraine: Kyiv, 2018. C. 37-38.
2. Modeling and Integrating Educational Cloud Services: A Monograph / Kopniak N., Korytska H. Lytvynova S. Nosenko Yu. Poida S. Siedoi V. Sipachova O. Sokol I. Spirin O. Stromylo I. Shyshkina M./ed. S. H. Lytvynovoi. Kyiv TsP «Kompynt», 2015. 163 p.
3. Pushkarova T. O. Rybalko O. O. Means of creating electronic resources for primary school. Physico-mathematical education. 2017. Issue 4 (14). C.271- 275.

2.2.1. Theme 2 Using Google Mobile Apps for Collaborative Education

2.2.2. Aim and expected results:

to give knowledge of possibility of usage of Google mobile applications for the organisation of joint interaction of participants of educational process in the conditions of primary school, to consider educational functions of possibility of usage of Google mobile applications for the organisation of joint interaction of participants of educational process in a mode online, acquisition of practical experience on creation of Google Documents and presentations, tables by means of mobile applications Google, practical work off of usage of these applications for exchange of information and information.

The result of work on the theme is the acquired knowledge on use of Google mobile applications for the organisation of joint interaction of participants of educational process in the conditions of primary school, understanding of their importance for efficiency and productivity of training, ability to demonstrate the acquired practical



skills and abilities to use mobile applications of Google for joint work in pairs, groups, for the organisation of teamwork.

2.2.3. Criteria and forms of assessment of learning outcomes on the topic

Assessment in practice: assessment of the quality of Google Docs, Google presentations in the process of working in a group online. Evaluating the level of performance, creativity, teamwork, quality of interaction.

Summative assessment is carried out on the basis of the results of the practical lesson, assessment of the level of preparation of the practical part of independent work, assessment of the quality of prepared materials using the mobile application Google Table and their use in the educational process of primary school.

To assess the results of training on the materials of the lecture is conducted as an oral survey, as well as a written, test survey based on Google Form. To check the level of practical skills in creating and editing Google Documents and presentations, the current ballasting is used, the current control is carried out at each seminar, practical / laboratory lesson, the performance of tasks for independent work is evaluated separately.

2.2.4. Digital tools

Mobile applications: Google Docs, Google Presentations, Google Spreadsheets, Google Search.

2.2.5. Innovative learning technologies

Training technologies, technologies for the development of critical thinking, problem-based, personality-oriented learning, interactive learning technologies, verbal, visual, explanatory-illustrative, research, search, practical, reproductive, creative teaching methods.

In the process of studying the topic, the space of educational and cognitive activities is used, the organization of mobile educational places, which are easily transformed for pair and group work; space for relaxation. To study the topic, it is necessary to have the latest multimedia (demonstration) teaching aids, high-quality individual teaching aids (mobile phones of various modifications), the availability of Internet communication.

2.2.6. Lecture

Mobile applications in collaborative activities of educational process participants

Consideration of educational possibilities of Google mobile applications (documents, presentations, tables) for the organisation of joint interaction of educational process participants. Terms and forms of organising combined, group teamwork by means of Google tools in online mode. Demonstration of domestic experience in using Google applications (documents, presentations, tables) in the educational process of primary school. Consideration of educational functions of applications, possibility of using mobile applications by Google.

2.2.7. Practice session

Educational process based on Google mobile applications working collaboratively.



Individual, group (pair) work with smartphones and tablets while using mobile applications.

Practical work in group or pairing with smartphones to create a joint Google Document.

2.1.8. Themes for individual and/or group tasks

Individual, group (paired) work with smartphones and tablets while using mobile applications Google (documents, presentations, tables) in the educational process of primary school. Individual practical work on creating lesson planning with the help of Google Documents, development of visibility for lessons and educational activities using mobile applications (Google Documents, Google Presentations, Google Tables).

2.2.9. Student self-study assignments

Improved work with Google mobile applications (documents, presentations, tables).

Practical independent work in pairs for improvement of work with Google Document and Google Presentation applications in the online mode.

Self-paired work to improve the work with Google mobile applications in the online mode.

Practical independent pair work with Google Table application, creation of the general table for using on lessons in primary school.

Independent pair work with Google application Presentation on creation of the project-presentation "The modern teacher of primary school - experience, prospects" and its placing on a personal site.

Practical independent pair work online while filling out the thematic Google Table.

Work in pairs for creating tasks to organise distance learning on a smartphone using the mobile application Google-Classroom. Development of lessons and scenarios of educational activities using applications (Google Presentations, Google Tables).

Watching the training video.

Preparation of materials for placement on the student's personal website. Placing digital products on the topic on the student's personal website.

Work evaluation methods: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey using Google form (tests on the topic to test the level of students' practical skills to create an individual educational space for teachers).

2.2.10. Methodological materials and guidelines

During the lecture it is important to focus on the list of Google mobile applications that you can work online in pairs, groups and teams. It is necessary to focus on expediency and effectiveness of using Google mobile applications for collaborative activities that may be of interest to 3rd-4th grade students. Attention should be paid to consideration of educational opportunities of these applications and study of domestic experience of using applications in primary school practice.

In the process of practical training it is necessary to pay attention to expediency and necessity of use of mobile applications Google Table as a form of training which helps to carry out generalization, systematization of the studied material on lessons of generalization of knowledge and so on.



You can use collaboration between educational participants and Google mobile applications as an element of group collaboration on an educational project to summarize and organize knowledge.

It should be noted that the independent paired work on the topic will be more effective if all the participants of collaborative work previously agreed on the scope of work and discuss the content of future educational project work. The acquired practical skills of collaborative work can be applied in everyday life of the future teacher, as well as in the process of working on a research project or in order to distribute the scope of work among the participants of the educational process.

Guidance and advice for students

In the process of studying the topic, students have access to the teaching materials of the lecture class. For performance of all practical and seminar lessons students have access to visual means of training, training videos, examples of practical works with mobile applications Google Document, Google Presentation, Google tables for the organization of joint activity of students online. Students receive recommendations on algorithm of work with mobile applications Google Documents, Google Presentations, Google Tables. All workshops and seminars must have detailed instructions for their implementation.

Recommended resources of information (including electronic resources)

1. Vorozhbyt A. V. Web-oriented educational information environment of an educational institution. Information technologies in education. 2018. №3(36). C. 20-29
2. Horbatiuk R. M. Tulashvili Y. Y. Mobile education as a new technology in higher education. Scientific Newsletter of Uzhgorod National University. 2013. №27. C. 31-34. URL: http://nbuv.gov.ua/UJRN/Nvuuped_2013_27_10
3. Evzykova O. V. What is mobile learning and BYOD. Teachtech. 2015. URL: <http://teachtech.ru/teoriya-onlajn-obucheniya/hto-takoemobilnoe-obuchenie-i-byod.html>
4. Morze N. Training of E-Learning Managers: a Competent Approach // Information Technologies and Learning Media / Nataliia Morze Olena Hlazunova Olena Kuzminska. Tom 60, №4., Kyiv, 2017. C.220-238.
5. Pinchuk O. P. Lytvynova S. H. Burov O. Y. Synthetic learning environment is a step towards new education. Information technology and learning tools. 2017. Tom 60. ed. 4, Kyiv, 2017. C. 28-45.

2.2.1. Theme 3 Research and organization of game activities in the educational process based on Google mobile applications

2.2.2. Aim and expected results:

to provide knowledge about the possibility of using Google mobile applications in the educational process of primary school, their educational functions, the possibility of using the joint interaction of participants of the educational process, research and organization of game activities in the educational process; to acquire practical skills in educational planning, implementation of notes with the help of Google -Keep application, to gain practical experience in creating individual routes with the help of



Google Maps, practicing the process of educational planning, using the application of Google -Keep.

Results of this topic are the acquired knowledge on the use of Google mobile applications for research and organisation of game activities in the educational process, understanding their importance for the effectiveness and productivity of learning, the ability to demonstrate the acquired practical skills and the ability to use Google mobile applications for research and organisation of game activities in lessons with primary school students.

2.2.4. Digital tools

Mobile applications: Google Art Culture, Google Earth, Google Expedition, Google Explorer.

2.2.5. Innovation in learning technologies

Training technologies, integration technologies, technologies of development of critical thinking, technologies of personally-oriented learning, interactive learning technologies, practical, verbal, visual, explanatory-illustrative, research, search, creative methods of learning.

2.2.6. Lecture

Research and gaming activities by means of mobile applications Google in the educational process of primary school.

Familiarize yourself with the ability to use Google mobile applications Google Art Culture, Google Earth, Google Expedition, Google Researcher to organise research and game activities in the educational process in the primary school environment. Explore the educational features and opportunities of using Google mobile applications to organize research and gaming activities. Acquaintance with the experience of using applications in the educational process in primary school.

2.2.7.1 Practice session

Mobile applications Google Art Culture, Google Earth in the educational process of primary school.

Practical development of Google applications Google Art Culture, Google Earth in educational process. Practical work (individual or paired) to create lesson notes for primary school students from a selected academic discipline (for example, art lessons, "I explore the world" natural science lessons, etc.).

2.2.7.2 Mobile applications Google Expedition, Google Explorer in the educational process of primary school.

Practical work with the use of mobile applications, creating outlines for different lessons of primary school, educational activities or in the process of organizing circle work with the use of mobile applications Google Expedition, Google Researcher.

2.2.8. Themes for individual and/or group tasks

Individual, group (pair) work with smartphones and tablets using mobile applications. Individual practical work on creating lesson notes, educational activities using mobile applications Google Expedition, Google Explorer.



2.2.9. Student self-study assignments

Improvements of mobile applications

Practical self-sufficient individual and pair work for improving the work with Google applications Google Art Culture, Google Earth. Creation of a bank of innovative methods for using mobile applications in the educational process of primary school.

Watching educational video. Preparation of materials for placement on the student's personal website.

Methods of work evaluation: oral survey (knowledge of theoretical material on the lecture materials), written survey (if necessary - individual, group, collective), test survey using Google form (tests on the topic to test the level of acquisition of practical skills of students to create an individual educational space teacher).

2.2.10. Methodological materials and guidelines

During the lecture, it is important to focus on the feasibility and effectiveness of the usage of mobile applications Google as a kind of organisation of research and game activities in primary school. It is important to pay attention to the benefits of occasional use of these applications in some lessons or educational activities. It is necessary to pay attention to consideration of educational possibilities of mobile applications and viewing of domestic experience of introduction of research and game activity with primary school students.

It is important to demonstrate the results of the use of these applications in the lessons and educational activities of the teacher.

In the course of the practical training it is necessary to pay attention to the expediency and necessity of using Google mobile applications in the process of preparing lessons within the school practice, as well as in the preparation of educational activities with primary school students as a kind of innovative form of work within the framework of educational reforms.

The usage of these Google applications can be implemented to develop students' research and search skills, as well as to implement game moments in the classroom.

Guidance and advice for students

In the process of studying the topic the students get access to the teaching materials of the lecture. For performance of all practical and seminar lessons students have access to visual means of training, educational videos for use of mobile applications Google Google Art Culture, Google Earth. Google Expedition, Google Researcher in practical works. Students receive recommendations on algorithm of work with mobile applications Google Google Art Culture, Google Earth. Google Expedition, Google Researcher. All practical and seminar lessons should have detailed instructions on their performance.

List of recommended literature (including electronic resources)

1. Horbatiuk R. M. Tulashvili Y. Y.. Mobile learning as a new technology for higher education. Scientific Newsletter of Uzhgorod National University. 2013. №27. C. 31-34. URL: http://nbuv.gov.ua/UJRN/Nvuuped_2013_27_10
2. Evzykova O. V. What is mobile learning and BYOD. Teachtech. 2015. URL: <http://teachtech.ru/teoriya-onlajn-obucheniya/chto-takoemobilnoe-obuchenie-i->



byod.html

4. Morze N. Training of E-Learning Managers: a Competent Approach // Information Technologies and Learning Media / Nataliia Morze Olena Hlazunova Olena Kuzminska. Tom 60, №4., Kiev, 2017. C.220-238.
5. Pinchuk O. P. Lytvynova S. H. Burov O. Y. Synthetic learning environment is a step towards new education. Information technology and learning tools. 2017. Tom 60. ed. 4, Kiev, 2017. C. 28-45.
6. Digital Agenda of Ukraine Project - 2020. Conceptual bases (version 1.0). December, 2016. URL: <https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf>.
7. Digital literacy of the modern teacher of a new Ukrainian school: a collection of theses reports of participants all-Ukrainian scientific-practical seminar / Ed. O. E Konevshchynskoi O. V. Ovcharuk. Kyiv.: Institute of Information Technologies and Means of Education. Ukraine: Kyiv, 2018. 61 p.
7. Konceptcia informatizácie a digitalizácie rezortu školstva s výhľadom do roku 2020. URL: hsr.rokovania.sk/data/att/146089_subor.docx
8. Palamar B. I., Vaskivska H. O., Palamar S. P. Didactical determinants use of information and communication technology in process of training of future specialists. Wiadomości Lekarskie. Warszawa: Wydawnictwo Aluna, 2017. T. LXX. Nr 4. S. 838–842. (Scopus).
9. Santos I., Bocheco O. Exploring BYOD Usage in the Classroom and Policies. International Journal Of Information And Communication Technology Education. 2016. №4. C. 51-61.

3.2. Content module 3.

Visualization of educational content by means of digital tools

2.2.1. Topic 1 Creating educational video content via live YouTube tools and digital programs

2.2.2. Aim and expected results:

acquaintance with the experience of using instructional video content in primary school practice, its purpose, opportunities, experience; review of the technical capabilities of YouTube live broadcast tools, list of technical capabilities of digital programs (Camtasia and Faststone Capture examples) for creating instructional video; practical experience in organising live broadcasts via YouTube channel, practical skills and experience of setting up, tools for creating live broadcasts, practical experience, practical skills and experience of creating instructional video content, etc..

The result of the work on the topic is the acquired knowledge on the use of educational video content in the practice of primary school activities, its purpose, opportunities, experience, understanding of the technology of creating instructional video of their importance for the efficiency and productivity of learning, the ability to demonstrate acquired practical skills in organizing live broadcasts via YouTube channel and the ability to use digital programs to prepare instructional video for primary school students.

2.2.3. Criteria and forms of learning outcomes assessment on the topic



Building Evaluations in a Hands-on Lesson: assessing the quality of creating a live YouTube channel online. Evaluation of the level of creativity, creative approach, evaluation of teamwork, quality of interaction and quality of content content of educational content.

The summative assessment is based on the results of practical, class and individual work of students to assess the level of preparation of the practical part of the individual work, assessment of the prepared video materials by means of live broadcasts on YouTube channel and by means of using in the educational process of primary school, digital programs (for example, Camtasia and Faststone Capture) to create educational educational video.

In order to assess the learning outcomes of the lecture materials, both an oral survey and a written, test survey based on Google Form are conducted. To check the level of practical skills in creating live broadcasts via YouTube channel in the online mode and the use of digital programs to create a training video is used current ballistic individual assessment. Ongoing control is carried out at each seminar, practical lesson, and the performance of independent tasks is evaluated separately.

2.2.4. Digital tools

Camtasia and Faststone Capture digital programs, YouTube channel digital tools

2.2.5. Innovative educational technologies

Training technologies, integration technologies, technologies for the development of critical thinking, problem-oriented, personal learning, blended learning technologies, interactive learning technologies, verbal, visual, explanatory and illustrative, research, search, practical, reproductive, creative methods of learning.

2.2.6. Lecture

Tutorial video in the activities of a primary school teacher.

Tutorial video, educational video content: purpose, means, experience. Possibilities of digital YouTube channel tools for creating training videos. Experience of using live YouTube channel video. Possibilities of digital programs Camtasia and Faststone Capture for creating instructional video.

2.2.7. Practice session

Technology for creating educational video content using YouTube tools

Practical work with YouTube channel on creating live broadcasts, video broadcasting settings. Practical individual or pair work to create YouTube live broadcasts. Creating instructional video lessons in primary school.

2.2.7.2. Technology for creating educational video content via digital programs

Practical work on creation of tutorial video with the help of digital programs Camtasia and Faststone Capture, work on the sounded presentation.

2.2.8. Topics of individual and/or group tasks

Individual, group (paired) work to create a training video using digital programs Camtasia and Faststone Capture to create a sounded presentation and prepare an educational training video lessons of primary school.

2.2.9. Student self-study assignments



Improvement of educational video content creation using live YouTube tools and digital programs

Individual work by students to improve educational video content creation using live YouTube tools and digital programs. Individual work to create an educational webinar on YouTube channel with demonstration of educational material on any primary school subject.

Creation of the sounded presentation and teaching video with the help of Camtasia Studio and Faststone Capture programs. Placing finished products on the website.

Practical independent individual or pair work to improve the work on YouTube channel, no access settings. Using educational video in the educational process of primary school. Developing lesson plans and scenarios for educational activities using educational videos..

Preparing materials for placement on the student's personal website.

2.2.10. Methodological materials and guidelines

During the lecture, it is important to focus on the feasibility and effectiveness of using digital YouTube channel tools to create instructional videos. Viewing the experience of using live YouTube channel video.

Attention should be paid to the consideration of educational opportunities and viewing the domestic experience of introducing digital programs Camtasia and Faststone Capture for the preparation of training videos.

It is important to demonstrate the results of the prepared live broadcasts and training videos and evaluate the content of the educational video and the quality of its technical design..

During the practical lesson, attention should be paid to the appropriateness and necessity of using digital YouTube tools in the preparation of lessons in the school practice. A competition for the best instructional video can be arranged.

Individual practice with digital Camtasia and Faststone Capture video programs should pay attention to the direction of the film, the quality and appropriateness of the credits, the quality of the film's design, the degree of disclosure of the topic of the film, and the practical relevance to primary school students. Particular attention should also be paid to the language of presentation, which should be designed for primary school students - clear, uncomplicated, understood, as well as to the quality of the film's voice, duration of the film, and the like.

Guidance and advice for students

In the process of studying the topic, students have access to the teaching materials of the lecture, practical and seminar classes, namely: tutorial video, visual learning tools, algorithms for working with digital tools to create a live YouTube channel, advice on how to use digital programs Camtasia and Faststone Capture to prepare a training video. All practical and seminar sessions should have detailed instructions on how to implement them.

List of recommended literature (including electronic resources)

1. Vorozhbyt A. V. Web-oriented information and educational environment of an educational institution. Information technologies in education. 2018. №3(36). C. 20-29
2. Horbatiuk R. M. Tulashvili Y. Y. Mobile learning as a new technology in higher



- education. Scientific Newsletter of Uzhgorod National University. 2013. №27. C. 31-34. URL: http://nbuv.gov.ua/UJRN/Nvuuped_2013_27_10
3. Evzykova O. V. What is mobile learning and BYOD. Teachtech. 2015. URL: <http://teachtech.ru/teoriya-onlajn-obucheniya/chto-takoemobilnoe-obuchenie-i-byod.html>
4. Morze N. Training of E-Learning Managers: a Competent Approach // Information Technologies and Learning Media / Nataliia Morze Olena Hlazunova Olena Kuzminska. Tom 60, №4., Kiev, 2017. C.220-238.
5. Pinchuk O. P. Lytvynova S. H. Burov O. Y. Synthetic learning environment is a step towards new education. Information technology and learning tools. 2017. Tom 60. ed. 4, Kiev, 2017. C. 28-45.
6. O'Reilly T. What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software/ Tim O'Reilly // International Journal of Digital Economics, 2007. – P. 17-37.
7. Griffin T. Evolution of blended learning in a large enrolment subject: What was blended and why? / Tim Griffin, Rosemary Thomson / Proceedings ascilite Melbourne 2008 – P. 355–35

2.2.1. Theme 1 Use of interactive tools Padlet and Linoit in primary school teacher education activities

2.2.2. Aim and expected results

Providing knowledge about the use of Padlet and Linoit interactive whiteboards in educational activities, exploring their technical capabilities; providing practical experience in preparing didactic material for organizing and conducting lessons in primary school based on Padlet and Linoit interactive whiteboards, gaining practical experience in placing educational materials, providing access to viewing educational products.

The result of the work on the topic is knowledge gained on the use of Padlet and Linoit interactive whiteboards in primary school educational activities, their purpose, opportunities, experience, understanding of the technology of creating interactive Padlet and Linoit whiteboards, their importance for the efficiency and productivity of learning, the ability to demonstrate acquired practical skills in developing and setting up interactive Padlet and Linoit whiteboards and the ability to use interactive whiteboards to prepare instructional videos for primary school students.

2.2.3. Criteria and forms of assessment of learning outcomes on the topic

Formative assessment in practice: assessment of the quality of the didactic material created for the organization and implementation of lessons in primary school on the basis of interactive whiteboards Padlet and Linoit.

Assessment of creativity, teamwork, interaction and content on Padlet and Linoit interactive whiteboards.

The cumulative assessment is based on the results of the practical training and individual work of students to assess the level of preparation of the practical part of self-study, evaluation of the quality of prepared didactic materials for lessons using



interactive whiteboards Padlet and Linoit and providing practical experience in preparing lesson plans in primary school using interactive whiteboards Padlet and Linoit them in the educational process of primary school.

To assess the learning outcomes of the lecture, both an oral survey and a written, test survey based on Google Forms are used. To test the level of practical skills in creating interactive whiteboards Padlet and Linoit and filling them with materials for teaching, we use a current ballistic individual assessment. The current control is carried out at each seminar, practical lesson, and the performance of independent tasks is evaluated separately.

2.2.4. Digital tools

Digital tools of interactive boards Padlet and Linoit.

2.2.5. Innovative education technologies

Training technologies, integration technologies, technologies for the development of critical thinking, problem-oriented, personal learning, blended learning technologies, interactive learning technologies, verbal, visual, problem, research, search, practical, creative methods of learning.

2.2.6. Lecture

*Interactive boards Padlet and Linoit in primary school teacher education activities
Interactive boards in the educational activities of a teacher. Preparation of materials for visualization of educational material. Familiarisation with the experience of using interactive boards Padlet and Linoit in educational activities. Experience of using interactive Padlet and Linoit boards in the classroom and in the after-school educational environment. The possibilities of interactive Padlet and Linoit boards to create didactic material.*

2.2.7.1 Practice session

Padlet and Linoit technology for creating interactive boards for primary school students.

Individual work with the Padlet platform for creating an interactive board for sharing educational information and displaying pedagogical experience. Practical work on exploring the technical capabilities of the Linoit interactive whiteboard and their use in educational activities.

2.2.7.2 Creating a Padlet interactive board via digital tools and Linoit electronic notebook

Individual, pair and group work with the Padlet platform to create an interactive board for sharing educational information and demonstrating teaching experiences. Practical work to explore the technical capabilities of the Linoit interactive whiteboard and their use in educational activities. Individual, group (paired) work to create didactic material for organizing and conducting lessons in a primary school based on interactive boards Padlet and Linoit.

2.1.8. Topics of individual and/or group tasks

Individual work on creating an interactive board for sharing educational information and demonstrating teaching experience on the Padlet web service. Practical work on studying the technical capabilities of the Linoit interactive board and its use in educational activities.



2.2.9. Student self-study assignments

Improvements to Padlet and Linoit tools

Individual work done by students to improve their work with the Padlet and Linoit tools. Individually working with Padlet to create an interactive board to share educational information and demonstrate teaching experiences.

Create didactic materials and lesson design for primary school students using Padlet and Linoit interactive whiteboards. Watch a tutorial video on creating didactic material for creating and developing lessons for primary school students using the Padlet and Linoit interactive whiteboards. Preparing materials for placement on the student's personal website.

2.2.10. Methodical materials and instructions

Individual work done by students to improve their work with the Padlet and Linoit tools. Individually working with Padlet to create an interactive board to share educational information and demonstrate teaching experiences.

Create didactic materials and lesson design for primary school students using Padlet and Linoit interactive whiteboards. Watch a tutorial video on creating didactic material for creating and developing lessons for primary school students using the Padlet and Linoit interactive whiteboards. Preparing materials for placement on the student's personal website.

Individual practical work using didactic material for the organization and delivery of lessons in primary school on the basis of interactive whiteboards Padlet and Linoit should pay attention to the quality of design of materials, the degree of disclosure of the topic of the lesson and the practical relevance of the prepared materials for primary school students.

Guidance and advice for students

Students have access to teaching materials for thorough study of lecture materials and practical and seminar works. For all practical and seminar lessons, students have developed training videos, visual learning tools to create and populate interactive Padlet and Linoit whiteboards and tips for using them in the work of a primary school teacher. All practical and seminar sessions should have detailed instructions for their implementation.

List of recommended literature (including electronic resources)

1. Zubakhina Y. M. Application of Padlet social service in educational process: URL : https://www.informatika.udpu.org.ua/?page_id=1175
2. S. Kondratiuk. Infographics as a visualisation tool for educational content. Cherkassy., 2018, p.36.
3. A. V. Sliepukhin I. N. Semenovi, Designing teaching methods and techniques for using ICT in a mixed learning model. Kiev .: 2017, 15 p
4. Rassel S. Artificial Intelligence: a modern approach / S. Rassel P. Norviih. M . Viliams, 2016. 578 p
5. Khmil N. Padlet social service as an element of pedagogical activity / N. Khmil S. Diachenko // Informatics and information technology in educational institutions. – 2014. – № 2. – C. 24-30.
6. Khmil N.A. Virtual interactive whiteboards and their use in educational process: Methodological recommendations / N.A. Khmil I.V. Morkvian T.V. Otroshko. – X. :



Communal institution "Kharkov Humanitarian and Pedagogical Academy" of Kharkov Regional Council, 2015. – 60 p.

2.2.1. Theme 3 Creating virtual posters, infographics and other means of visualising educational content via electronic platform tools

2.2.2. Aim and expected results:

Introduce examples of visualisation of educational content based on virtual posters, educational infographics designed for visualisation and demonstration in the lessons on academic disciplines for primary school students in various academic subjects (optional). Introduction to Canva's digital tools for creating presentations, banners, announcements and other educational products through Canva and other electronic platforms. Providing practical experience in preparing virtual posters, educational infographics on the Canva Open Educational Platform. Providing practical skills for creating virtual posters, educational infographics on the Canva Open Educational Platform.

The result of the work on the topic is the acquired knowledge on the technology of creating digital products for visualising educational content in the form of posters, infographics, understanding of the technology of creating posters, infographics to visualise the educational process, their importance for the efficiency and productivity of learning, the ability to demonstrate acquired practical skills in developing posters, infographics based on the web service Canva..

2.2.3. Criteria and forms of learning outcomes assessment on the topic

Formative assessment in the process of practical training: quality assessment of virtual poster creation, educational infographics on the open educational platform Canva. Evaluation of the level of creativity, creative approach, evaluation of teamwork, quality of interaction and quality of content content of educational content.

Summative assessment is carried out based on the results of practical, class and independent work of students to assess the level of training of practical part of independent work, quality assessment of prepared virtual posters, educational infographics on the open educational platform Canva.

To assess the results of training on the materials of the lecture is conducted as an oral survey, as well as a written, test survey based on Google Form. To check the level of practical skills to create posters and infographics on the web resource Canva uses a current ballasting individual assessment. The current control is carried out at each seminar, practical lesson, and the performance of independent work tasks is evaluated separately.

2.2.4. Digital tools

Digital tools for creating virtual posters, educational infographics, tools of the educational platform Canva

2.2.5. Innovative learning technologies



Training technologies, integration technologies, technologies for the development of critical thinking, problem-oriented, personal learning, interactive learning technologies, practical, verbal, visual, explanatory and illustrative, research, search, reproductive, creative methods of learning

In the process of studying the topic the space of educational and cognitive activity is used; the organization of mobile educational places, which are easily transformed for pair and group work; space for recreation.

2.2.6. Lecture

Visualization of educational process by means of virtual posters, infographics in primary school

Visualization of educational content: posters, infographics on the lessons of various academic disciplines in primary school. Educational opportunities of visualization, purpose, principles of use. Viewing the experience of using virtual posters, educational infographics at the lessons of primary school. Use of visual accompaniment in extra-curricular educational activities in primary schools.

2.2.7. Practice session

Technology for creating virtual posters for primary school students

Practical work on creating virtual posters, educational infographics on the open educational platform Canva. Practical work individually or in pairs to create virtual posters, educational infographics on the open educational platform Canva for learning.

2.1.8. Topics of individual and/or group tasks

Individual work on creating a virtual poster, wide presentation, announcements and infographics on the Canva platform. View educational videos. Individual, group (pair) work for creating virtual posters, educational infographics on the service Canva for primary school lessons.

2.2.8. Student self-study assignments

Improvement of virtual and infographic poster creation work

Individual work on creating a virtual poster, wide presentation, ads, infographics on the Canva web service. Preparation of materials for visualisation of primary school education process. Practical individual or paired work to improve the creation of virtual posters, educational infographics on the Canva web service. Presentation of digital products. Preparation of materials for placement on a student's personal website.

2.2.10. Methodological materials and guidelines

During the lecture, it is important to focus on the feasibility and effectiveness of digital tools for creating virtual posters, educational infographics in the classroom and in extracurricular activities in primary school settings. View the experience of using visualisation of educational material in the primary school. Emphasis should be placed on considering educational opportunities for visualization of the educational process in the light of educational reforms.

An important point of the lessons is the demonstration of own visual materials, evaluation of the content of posters and infographics, quality of visual design and technical execution of materials.

Preparation of materials for placement on a personal website.



In the course of the practical training, you should pay attention to the appropriateness and necessity of using all the features of the Canva platform in the process of creating a virtual poster, wide presentation, announcement and infographics. You can organize a virtual poster competition and the like.

Guidance and tips for students

In the process of studying the topic, students have access to teaching materials of lecture, practical and seminar classes. For all practical and seminar lessons, students have access to instructional videos, visual learning tools to create posters and infographics on the Canva platform and examples of their use in lessons with primary school students..

List of recommended literature (including electronic resources)

1. S. Kondratiuk. Infographics as a means of visualising educational content. Cherkassy ., 2018, p.36.
2. A. V. Sliepukhin I. N. Semenovoi, Designing teaching methods and techniques for using ICT in a mixed learning model. Kiev .: 2017, 15 c
3. J. Cows, L. Floridi, Prolegomena to a White Paper on an Ethical Framework for a Good AI Society, Social Science Research Network, Rochester, NY, SSRN Scholarly Paper ID 3198732, 19 June 2018
4. Lengler R. Towards a Periodic Table of Vizualization Methods for Management / Ralph Lengler, Martin J. Eppler. URL : http://www.visual-literacy.org/periodic_table/periodic_table.pdf

2.2.1. Theme 4 Artificial Intelligence Technology

2.2.2. Aim and expected results:

To introduce the concept of "artificial intelligence", the possibilities of applying artificial intelligence technology, its purpose for studying and creating intelligent information technologies, to provide knowledge about the possibilities of using artificial intelligence technology to recognize voice, text, images, music, the use of robotics with Arduino kits in the practice of primary school teachers. Introduction to Arduino projects and programming in the Arduino IDE environment.

The result of the work on the topic is the acquired knowledge on artificial intelligence and the possibilities of using artificial intelligence technology in the practice of applications for the recognition of voice, text, images, music, the possibilities of using robotics in the practice of a primary school teacher, understanding of the technology of working with applications that are built on the use of artificial intelligence, the ability to demonstrate the acquired practical skills of working with applications based on technology artificial intelligence.

2.2.3. Criteria and forms of learning outcomes assessment on the topic

Formative evaluations in the process of practical training: evaluation of the quality of creating applied expert systems, models, methods and tools for problem solving. Evaluation of the level of creativity, creative approach, evaluation of teamwork efficiency, quality of interaction and quality of the content of educational content.

2.2.4. Digital tools



Digital tools for mastering artificial intelligence technologies

2.2.5. Innovative learning technologies

Training technologies, integration technologies, technologies for the development of critical thinking, problem-oriented, personal learning, interactive learning technologies, practical, verbal, visual, explanatory and illustrative, research, search, creative methods of learning.

2.2.6. Lecture

Artificial Intelligence in Education

Familiarize with the concept of "artificial intelligence", the possibilities of applying artificial intelligence technology, the purpose of studying and creating intelligent information technologies. Familiarize with the modern directions of research in artificial intelligence and areas of its application. Familiarize with modern achievements of science and technology in the use of artificial intelligence technology. Give knowledge about the possibilities of using artificial intelligence technology in the modern educational process.

2.2.7. Practice session

Artificial intelligence technology application in educational process

Individual, paired and group work of students with electronic teaching materials in order to master the structural and logical scheme of training in artificial intelligence technologies (educational films, electronic textbooks and teaching materials). Individual work with mobile voice, text, image, music recognition applications and online spell check services based on artificial intelligence. View instructional videos on how to use robotics in practice. Practical work with Arduino sets. Creating a project on the Arduino, stages of work: writing code layout and flashing. Programming in the Arduino IDE environment.

2.1.8. Topics of individual and/or group tasks

Individual, paired and group work of students with electronic learning materials, voice, text, image, music recognition based on artificial intelligence technology.

Personalized work with mobile applications for voice, text, images, music recognition

2.2.8. Student self-study assignments.

Students work independently with mobile applications for recognition of voice, text, images, music. Students work individually, in pairs and in groups with electronic learning materials. Viewing instructional videos on how to use robotics in practice. Practical work with Arduino kits. Creating a project on the Arduino, Programming in the Arduino IDE environment.

List of recommended literature (including electronic resources)

1. The integration of artificial intelligence into all niches of business is outgrowing from a trend to a priority. URL: <https://www.everest.ua/ai-platform/analytics/intehratsiya-shtuchnoho-intelektu-v-usinishi-biznesu-pererostaye-z-tendentsiyi-u-priorytetnu-zadachu>
2. S. Kondratiuk. Infographics as a means of educational content visualisation. Cherkassy ., 2018, p.36.
3. Zubakhina Y. M. Application of Padlet social service in educational process: URL : https://www.informatika.udpu.org.ua/?page_id=1175



4. Sliepukhin A. V. Semenova I. N. Designing teaching methods and techniques of ICT use in a mixed learning model. Kiev .: 2017, 15 p
5. Rassel S. Artificial Intelligence: a modern approach/ S. Rassel P. Norvih. M. Viliams, 2016. 578 p
6. Tei A. Logical approach to artificial intelligence / A. Tei P. Hribomon, etc. M .: Peace, 2015. 432 p.
7. Khmil N. Diachenko S. Padlet social service as an element of pedagogical activity / N. Khmil S. Diachenko. Informatics and information technology in educational institutions. Kiev, 2015. Edition. 2. C. 24-30.
8. Shostak I. V. Artificial Intelligence Systems: Methodological guidelines for laboratory work / I. V. Shostak I. V. Hruzdo M. O. Danova Y. I. Butenko. Kharkiv NAKU «KhAI», 2015. 80 p.
9. J. Cows, L. Floridi, Prolegomena to a White Paper on an Ethical Framework for a Good AI Society, Social Science Research Network, Rochester, NY, SSRN Scholarly Paper ID 3198732, 19 June 2018
10. Lengler R. Towards a Periodic Table of Vizualization Methods for Management / Ralph Lengler, Martin J. Eppler. URL : http://www.visual-literacy.org/periodic_table/periodic_table.pdf
11. Perkal P.J. Monkey business finally settled: the 'monkey selfie' disputes. Kluwer Copyright Blog. 2018. URL: <http://copyrightblog.kluweriplaw.com/2018/02/05/monkey-business-finally-settledmonkey-selfie-disputes>.
12. Technology compass for education 2019-2020. Available from: URL : <https://www.kennisnet.nl/fileadmin/kennisnet/publicatie/Kennisnet-TechnologyCompass-2019-2020.pdf>.
13. United States Court of Appeals for the Ninth Circuit. 2018. URL: <http://cdn.ca9.uscourts.gov/datastore/opinions/2018/04/23/16-15469.pdf>

Tasks for final certification

3.1. List of questions for final control.

Examination ticket № 1

1. Checking the students' level of practical skills in the course "Digital tools in teacher's educational activities". Performing a practical task: the benefits of using Google Translator mobile applications, demonstration of translation capabilities and the stages of text translation.
2. Information and educational space of a primary school teacher.
3. Google Disk object usage - documents for organization of educational activity in primary school.

Examination ticket № 2

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing a practical task: the benefits of working with Google Docs collaboratively, demonstrating the steps of sharing in order to edit a document, getting a link to a shared document.
2. Electronic educational planning, communication and interaction between participants using Google tools.



3. using Google Disk objects - presentations for organizing educational activities in primary school.

Examination ticket № 3

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing the practical task: demonstration of stages of creating Google Presentations, sharing for editing, inserting elements of the presentation, performing the task on your smartphone.
2. Google Disk objects usage for organisation of educational activity in primary school.
3. Google-Keep mobile application for planning the work of a modern teacher.

Examination ticket № 4

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing the practical task: demonstration of stages of creating Google Presentations, sharing for editing, inserting elements of the presentation, performing the task on your smartphone.
2. Google Disk objects usage for organisation of educational activity in primary school.
3. Google-Keep mobile application for planning the work of a modern teacher.

Examination ticket № 5

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing a practical task: demonstrating the steps of working with the Google Pictures application, the sequence of creating a postcard using the Google Pictures application.
2. Google-Keep mobile application in modern teacher's activities: benefits and opportunities.
3. Teacher's individual work on filling Google pages: features, technologies, etc.

Examination ticket № 6

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing the practical task: demonstrating the stages of creating a website and the method of obtaining the URL of the teacher's personal website by means of Google sites tools.
2. Mobile applications for interaction in collaborative activities of participants in the educational process.
3. Teacher's individual work on setting up a Google site and creating an original design: features, technology, etc..

Examination ticket № 7

1. Re-examination of practical students' nickname from the course "Digital Instruments in the educational activity of the teacher". Practical introduction:



demonstration of Google Tables, guided application of Google Tables in lessons in schools.

2. Google form in the activity teacher of primary classes. Attach a chicory on the lessons.

3. A follow-up of Google's mobile reports in the social process of the occipital school: perturbations and perspectives.

Examination ticket № 8

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing a practical task: the benefits of using Google Spreadsheets in a common educational activity, demonstrating the stages of sharing to edit Google Spreadsheets.

2. Organization of game activity on lessons by means of mobile applications Google.

3. Technology of creating a personal website of primary school teachers: basic stages, design.

Examination ticket № 9

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing a practical task: Demonstrating the stages of creating a virtual poster on the Canva platform.

2. Possibilities of using Google site to present professional electronic portfolio of primary school teacher.

3. Using Google Documents application in the educational process of primary school teacher.

Examination ticket № 10

1. Checking the students' level of practical skills in the course "Digital tools in teacher's educational activities". Performing practical task: advantages of using instructional video in lessons, demonstration of stages of creating live broadcasts on YouTube channel.

2. Creating educational video content of a primary school teacher: purpose, opportunities.

3. Primary school teacher's personal website: tasks, purpose, content.

Examination ticket № 11

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing the practical task: demonstration of the stages of embedding the training video on a personal site using the tools of Google sites.

2. Google Applications Presentations in the educational process of primary school.



3. Use of interactive tools Padlet in the educational activity of a primary school teacher: examples of use in lessons..

Examination ticket № 12

1. Checking the students' level of practical skills in the course "Digital tools in teacher's educational activities". Performing the practical task: demonstration of the stages of embedding the training video on a personal site using the tools of Google sites.
2. Google Applications Presentations in the educational process of primary school.
3. Use of interactive tools Padlet in the educational activity of a primary school teacher: examples of using them in lessons.

Examination ticket № 13

1. Checking the level of students' practical skills in the course "Digital tools in the educational activities of teachers". Performing a practical task: Demonstrating the steps to create a text and voice memo in the Google mobile application Google Keep.
2. Visualisation of educational process on the basis of virtual posters, infographics for pupils of primary school.
3. Google Jamboard app: features, settings and advanced features.

Examination ticket № 14

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Perform the practical task: Demonstrate examples of design choices for a virtual poster on the Canva platform.
2. Visualisation of educational process on the basis of infographics in primary school.
3. Technology of creating instructional video by means of live broadcast on YouTube channel..

Examination ticket № 15

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing the practical task: demonstration of stages of questionnaire creation using Google Form tools, adding new questions and design of the form.
2. Interactive whiteboards in elementary school lessons: purpose, examples of use, etc.
3. Using the Google Pictures application in primary school education.

Examination ticket № 16



1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing the practical task: demonstration of stages of obtaining a URL for Google Form, providing examples of creating tests using Google Form tools.
2. Information educational space of a modern primary school teacher.
3. Google Mobile Applications Documents in collaboration with participants of the educational process.

Examination ticket № 17

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: demonstrating the stages of infographics creation on the Canva platform.
2. The components of the information and educational space of a modern primary school teacher.
- 3 The technology of creating an educational video with the help of digital software tools.

Examination ticket № 18

1. Checking the students' level of practical skills in the course "Digital tools in teacher's educational activities". Performing a practical task: Demonstrating examples of Google Presentations design and stages of providing access for collaborative editing of Google Presentations.
2. Teacher's electronic portfolio, its varieties.
3. Google Mobile Applications Presentations in collaborative activities of educational process participants: opportunities, benefits.

Examination ticket № 19

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: demonstrating the stages of creating a virtual whiteboard on the Padlet platform.
2. Tools for using visual support of the lesson in primary school.
3. Types of electronic planning for the educational process using Google tools.

Examination ticket № 20

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: demonstration of creating a questionnaire using Google form tools.
2. Using infographics in primary school lessons.
3. Mobile applications of Google Tables in collaborative activities of participants in the educational process.

Examination ticket № 21



1. Checking the students' level of practical skills in the course "Digital tools in teacher's educational activities". Performing the practical task: demonstrating the sequence of installing the Google Keep application on your mobile phone and the stages of creating a photonattack in the Google Keep application.
2. information and educational space of a modern primary school teacher.
3. Using the mobile application Google Art Culture in the educational process of primary school.

Examination ticket № 22

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing the practical task: demonstration of live broadcast settings on YouTube channel.
2. Google Drive objects in educational activity.
3. Google Earth mobile application usage in the educational process of primary school..

Examination ticket № 23

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing the practical task: advantages of using notebooks in primary school lessons, giving examples.
2. Virtual and augmented reality. Possibilities and prospects of using them in the educational process.
3. Google mobile application usage Expedition in the educational process of primary school.

Examination ticket № 24

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: demonstrating the benefits of using Google presentations in the lessons in primary school, demonstrating the stages of creating a presentation with video clips.
2. Using YouTube video in primary school lessons.
3. Google Explorer mobile application in primary school educational process.

Examination ticket № 25

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performance of practical task: advantages of mobile applications developed on the basis of artificial intelligence, demonstration of stages of work on recognition of music files in mobile application Shazam.
2. E-learning tools in primary school.
3. Padlet interactive whiteboard technology and examples of primary school teacher use in educational activities.



Examination ticket № 26

1. Checking the students' practical skills level in the course "Digital tools in pedagogical activity of a teacher". Performance of practical task: advantages of mobile applications developed on the basis of artificial intelligence, demonstration of stages of work on recognition of music files in mobile application Shazam.
2. E-learning tools in primary school.
3. Interactive paddle board technology and examples of primary school teachers' use in educational activities..

Examination ticket № 27

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: demonstrating the steps of searching for information in the mobile application Arts & Culture, giving examples of how the application is used in primary school lessons.
2. "Upside down classroom" in the work of a modern primary school teacher.
3. Virtual poster technology for primary school students.

Examination ticket № 28

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performance of practical task: advantages of using mobile applications for research, demonstration of city search in Google Earth mobile application.
2. Forms of communication and interaction between participants of educational process using Google tools.
3. Google Class in the work of a modern primary school teacher.

Examination ticket № 29

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: the benefits of using the Google Explorer application in class, demonstrating the stages of installing the application on your mobile phone.
2. Technology of infographics creation for primary school students.
3. Variety of tasks in Google Class application, technology of creating tasks.

Examination ticket № 30

1. Checking the students' practical skills level in the course "Digital tools in teacher's educational activities". Performing a practical task: the advantages of using robotics in primary school lessons, giving examples.
2. Virtual information booklet and its use in educational process.
3. Forms of webinars organization using Google tools..



1.2. Test questions for the training course

1. With the help of which Google Disk object is tested?
a) Google Presentation b) Google Table c) Google View
2. What's known as Google Email settings, allows you to sort your emails
(a) Labs (b) Tags (c) Expansion
3. What should be the first steps for sharing a Google presentation?
a) Upload to disk, provide access for collaborative editing
b) download to a computer, provide access for shared viewing
c) Upload to disk, provide access for shared viewing
4. Google allows you to travel the world?
a) Google Mail b) Google-Keep c) Google Earth
5. Determine which sequence of actions is correct when connecting listeners to a planned webinar with help of Google Hangouts application?
a) send out invitation letters, make a trial connection
b) determine the date of the webinar and participants, schedule the event, make a trial connection, join the audience to the webinar
c) Open the Google Hangouts application and schedule a webinar date and send out letters
6. What is the platform for creating a virtual poster?
a) Canvas b) 123apps c) Canva
7. Which of the sentences is the right answer?
a) Google Docs lets you take voice notes and reminders
b) with the help of Google-Keep application you can make voice, text and photototacks.
c) Google Hangouts allows you to write text and take voice memos.
8. What tool can be used to create curricula?
a) Google Spreadsheets b) Google Calendar c) Google Presentations
9. What is the platform for creating infographics?
a) Canvas b) Canva c) 123apps
10. What kind of Google application provides the opportunity to organize distance learning at school?
a) Google Class b) Google Calendar c) Google Hangouts
11. In order to work on a shared document, you must grant access:
a) Provide access for collaborative editing
b) provide access for shared viewing
c) Provide access for comments
12. What application can be used to create an electronic portfolio?
a) Google Documents b) Google Website c) Google Hangouts
13. What do I have to do first in order to download a mobile application to my phone?
a) go to Google search b) go to Google Drive c) go to Play Market



14. Linoit web resource helps to create:
(a) An electronic album (b) An interactive whiteboard (c) An electronic journal
15. When applying which technology, pupils study theoretical material at home and do practical tasks at school?
a) Google classroom b) Google Class c) Google Hangouts
16. What is the correct order in the process of creating a live broadcast on YouTube?
a) Google search, find the YouTube channel
b) go to Google Drive, enter your own channel, schedule a live event, set up sound and access to start broadcasting
c) Go to Play Market, download the application, broadcast live
17. What Google Disk object helps you better visualize educational material in class?
a) Google Documents b) Google Presentations c) Google Form
18. What tool should you use to configure the mailbox interface ?
(a) Tags (b) labs (c) topics ?
19. What sign allows adding a new page to the site?
a) T b) + c) "".
20. What sign allows adding text to the site?
a) T (b) + c) "".
21. What tool is used to create a certificate or postcard?
a) Google Tables b) Google Presentations c) Google Drawings
22. What application can be used to quickly make an announcement for distance learning participants?
a) Google Class b) Google Document c) Google Hangouts
23. What application can be used to create a photorettacle with the help of?
a) Google Mail b) Google-Keep c) Google Hangouts
24. Padlet platform helps to create:
a) an electronic notebook b) an interactive whiteboard c) an electronic journal
25. What actions are correct when taking a planned survey with Google's form tools?
a) send out a survey invitation to your respondents in their mailboxes and a description of how to proceed with the Google Forms.
b) fill out the Google Form and place it on the Internet
c) create a Google Form, fill it out with survey questions, get a link to access the form, send the link to all the participants of the survey by mail, summarize the survey.
26. Fill in the blanks in the sentence.
Among Google's objects, _____ helps you create text material online.
Select the correct option.
a) Google Documents b) Google Presentations c) Google Form
23. With the help of which application it is possible to create a photorettacle?
a) Google Mail b) Google-Keep c) Google Hangouts
24. Padlet platform helps to create:



- a) an electronic notebook b) an interactive whiteboard c) an electronic journal
25. What steps are the right ones to take as part of a planned survey with Google's form tools?
- a) send out a survey invitation to your respondents in their mailboxes and a description of how to proceed with the Google Forms.
b) fill out the Google Form and place it on the Internet
c) create a Google Form, fill it out with survey questions, get a link to access the form, send the link to all the participants of the survey by mail, summarize the survey.
26. Fill in the blanks in the sentence.
Among Google's objects, _____ helps you create text material online.
Select the correct option.
- a) Google Documents b) Google Presentations c) Google Form
33. How to schedule an event and shoot a reminder for every day in the Google Keep app?
- a) Set up synchronization
b) to set up a reminder and set - every day
c) Text notes, press a reminder, make settings for each day, set the reminder time.
34. Which statement is correct about the possibilities of using E-Magazine ?
- a) the log allows you to view the grades of an individual student
b) the log allows viewing the grades of an individual student and the whole class
c) the log allows viewing the grades of an individual student and the whole class, the whole school
35. What tool allows you to make a site transition to another resource or site?
- a) button b) paste c) text
36. What is the right statement about the possibilities of working with the mobile application Google Art Culture ?
- a) the application allows viewing news from the sphere of culture
b) the application allows you to view the news, get acquainted with the works of artists
c) the application allows you to view news, learn about the work of artists, watch videos, works of art, visit virtual museums
37. Which mobile app allows you to travel to virtual museums?
- a) Google Art Culture b) Google Map c) Google Earth
38. Which Google Disk object helps to better create a virtual travel itinerary?
- a) Google My Maps b) Google Document c) Google Presentation
39. How to schedule an event and shoot reminders for every day in the Google Keep app?
- a) Set up synchronization
b) to set up a reminder and set - every day
c) text notes, press a reminder, set the settings for each day, set the reminder time.
34. Which statement is correct about the possibilities of using E-Magazine ?



- a) the log allows you to view the grades of an individual student
 - b) the log allows viewing the grades of an individual student and the whole class
 - c) the log allows viewing the grades of an individual student and the whole class, the whole school
35. What tool allows you to make a site transition to another resource or site?
- a) click b) paste c) text
36. What is the right statement about the possibilities of working with the mobile application Google Art Culture ?
- a) the application allows viewing news from the sphere of culture
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37. Which mobile app allows you to travel to virtual museums?
- a) Google Art Culture b) Google Map c) Google Earth
38. Which Google Disk object helps to better create a virtual travel itinerary?
- a) Google My Maps b) Google Document c) Google Presentation

3.3 Additional tasks for creative work

Creative task on the module № 1

1. Creation of a personal electronic presentation portfolio for its presentation at the pedagogical competition in the selected category:
- a) primary school teacher
 - b) teacher-educator class
 - c) a primary school teacher and an art teacher

Creative task on the module № 1

2. Create a lesson plan and prepare material for visualisation of educational content based on the selected lesson or event using a list of links to Google Disk objects:
- a) lesson from academic disciplines on the invariant component of the primary grade
 - b) a lesson from academic disciplines on the variant component of the primary grades
 - c) extracurricular activity scenario

Creative task on the module № 2

1. Create a lesson outline plan with the use of game activity in the educational process on the basis of mobile applications Google.
2. Create a lesson plan with the use of research activities in the educational process based on mobile applications Google..

Creative task on the module № 3

1. Create a lesson plan and prepare material for visualising educational content on the selected lesson or event using prepared virtual posters or educational infographics on the Canva platform.



2. Create an educational scenario and prepare material for visualising the event using prepared virtual posters or educational infographics on the Canva platform.

3.4. Procedure for final certification

A final assessment is made at the end of each meaningful module of the course.

The evaluation for each meaningful module of the training course includes:

- points for students' practical work in practical, seminar classes,
- scores for performing independent tasks,
- points for modular control.

Modular control of students' performance is estimated at 100 points.

Current control - 70% (of which 20% work at seminar classes, 20% practical work, 30% independent work).

Attestation takes the form of an exam.

The grade for each meaningful module includes points for a student's daily work in practical and seminar classes, as well as for performing independent work.

The final grade is in the form of an exam, providing for the performance of practical tasks and demonstration of an electronic portfolio filled with digital products prepared during the study of the discipline and the performance of test tasks and control works.

The control of progress is carried out by means of interrogation at practical lessons.

Control of students' independent work is carried out by performing written tasks, protection of reference works.

Tools for assessing learning success: rubrics, grading scale, checklist, test, ratings, improvement of sequences, lists of priorities, tables (Z-X-D-Y), evaluation sheets, checklists, questions for discussion, observation of students, forms, questions, diaries.

90-100 points - excellent (A) Excellent (excellent performance with only a small number of mistakes).

82-89 points - good (B) Very good (above average with a few mistakes).

75-81 points - good (C) Very good (generally correct execution with a certain number of mistakes)

67-74 points - satisfactory (D) Satisfactory (good, but also significant)

60-66 points - satisfactory (E) Sufficient (fulfilment meets minimum criteria)

35-59 points - unsatisfactory (FX) Weak (with possibility of retake)

1-34 points - unsatisfactory (F) Weak (with mandatory re-course).

A final assessment is made at the end of each meaningful module of the course.

The assessment for each meaningful module of the training course includes:

- points for students' practical work in practical, seminar classes,
- scores for performing independent tasks,
- points for modular control.

Modular control of students' knowledge is estimated at 100 points.

Current control - 70% (20% of them work at practical classes, 20% of practical work, 30% of independent work).

The evaluation system consists of the following activities with the weight of each of them for the final evaluation of the training course.

Criterion evaluation of completed tasks in the first substantive module (35%), in the



second substantive module (25%) and in the third module (40%).

For I module evaluation IC-1 (5,8%), IC-2 (5,8%), PsC-1 (5,8%), PsC-2 (5,8%), GC – 1 (5,8%), GC – 2 (5,8%), for II module evaluation IC-1 (4,2%), IC-2 (4,2%), PsC-1 (4,2%), PsC-2 (4,2%), GC – 1 (4,2%), GC – 2 (4,2%), For III module evaluation IC-1 (6,6%), IC-2 (6,6%), PsC-1 (6,6%), PsC-2 (6,6%), GC – 1 (6,6%), GC – 2 (6,6%).

Final evaluation of the sum of all acquired competences: IC-1 + IC-2+ PsC-1 + PsC-2 + GC – 1 +GC – 2

| Module | Competencies | Current estimate | | Final assessment | |
|-------------------|--------------|------------------|-------------|------------------|-------------|
| I module (35 %) | IC-1 | 5,8% | IC -11,6% | 5,8% | IC -11,6% |
| | IC -2 | 5,8% | | 5,8% | |
| | PsC -1 | 5,8% | PsC - 11,6% | 5,8% | PsC - 11,6% |
| | PsC -2 | 5,8% | | 5,8% | |
| | GC – 1 | 5,8% | GC - 11,6% | 5,8% | GC - 11,6% |
| | GC – 2 | 5,8% | | 5,8% | |
| II module (25 %) | IC -1 | 4,2% | IC -1-8,4% | 4,2% | IC -1-8,4% |
| | IC -2 | 4,2% | | 4,2% | |
| | PsC -1 | 4,2% | PsC - 8,4% | 4,2% | PsC - 8,4% |
| | PsC -2 | 4,2% | | 4,2% | |
| | GC – 1 | 4,2% | GC - 8,4% | 4,2% | GC - 8,4% |
| | GC – 2 | 4,2% | | 4,2% | |
| III module (40 %) | IC -1 | 6,6% | IC -1-13,2% | 6,6% | IC -1-13,2% |
| | IC -2 | 6,6% | | 6,6% | |
| | PsC -1 | 6,6% | PsC - 13,2% | 6,6% | PsC - 13,2% |
| | PsC -2 | 6,6% | | 6,6% | |
| | GC – 1 | 6,6% | GC - 13,2% | 6,6% | GC - 13,2% |
| | GC – 2 | 6,6% | | 6,6% | |

List of recommended literature (including electronic resources)

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1. Horbatiuk R. M. Tulashvili Y. Y. Mobile learning as a new technology in higher education. Scientific Bulletin of Uzhgorod National University. 2013. № 27. C. 31-34. URL: http://nbuv.gov.ua/UJRN/Nvuuped_2013_27_10
2. Evzykova O. V. What is mobile learning and BYOD. Teachtech. 2015. URL: <http://teachtech.ru/teoriya-onlajn-obucheniya/chto-takoemobilnoe-obuchenie-i-byod.html>
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