TETYANA BLYZNYUK

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2021

MoPED: Modernization of Pedagogical Higher Education by Innovative Teaching Instruments

586098-EPP-1-2017-1-UA-EPPKA2-CBHE-JP

GEOCULTURAL SCIENTIFIC LITERACY

SPECIALITY - *013 Primary Education.*

Specialization «English Language and Literature»

HIGHER EDUCATION DEGREE: *Master*

Developer: *Candidate of Pedagogical Sciences, Associate Professor–*
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Faculty: *Pedagogy*

2021

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The discipline Geocultural Scientific Literacy was developed within the framework of the international project of the EU Erasmus + (586098-EPP-1-2017-1-UA-EPPKA2-CBHE-JP, MoPED, 2017-2020). The textbook is designed to train future primary school teachers in the specialty "English language and literature". The aim of this manual is to provide learners with competencies that should be formed in the process of studying the material, define learning outcomes that generally correspond to these program competencies; offer clear criteria for evaluating learning outcomes. The content of the textbook is supplied with educational materials presented in the form of separate topics in accordance with the theme of the discipline. Each training class (lecture, practical) contains the main structural elements (topic, purpose, formulated in terms of learning outcomes), evaluation criteria, etc.; the tasks for independent work correspond to the content of the learning outcomes and provide various types of research educational activities, enriched with authentic material. The publication is targeted for the formation of semantic and methodological component of professional competence of future English teachers in primary school.

BRIEF SUMMARY OF THE COURSE:

The course "Geocultural scientific literacy" aims at improving students' command of English in the process of preparing a qualified specialist for work in New Ukrainian School. The educational content of the course contains material for the formation of students' geocultural scientific literacy through the recognition of the geographical and cultural differences of their native land and the English-speaking countries (Great Britain and the USA), scientific discoveries and achievements of prominent scientists in the field of STEAM (by the creation of game-cards "Guess Who?"). It is intended to familiarize students with innovative teaching tools based on English-language educational electronic resources. Within the course, future teachers are suggested to create their own educational content, which can be used in their professional activity in primary school.

Considerable attention is paid to the issues of conceptualization of geocultural scientific literacy; its evolution; developing a model of geocultural scholarly literacy, introducing innovative pedagogical technologies and teaching tools in primary school (Kahoot, Mentimeter, Flipgrid) for the development of appropriate educational content and constructive cooperation - student-teacher, student-student (pupil-teacher, pupil-pupil); development of future teachers' critical, creative thinking, presentations of educational creative work for collaboration with primary school students at lessons, etc.

KEY WORDS: The concept of "literacy", scientific literacy, geocultural scientific literacy, the English language, future teachers of the New Ukrainian school, primary school students, innovative pedagogical technologies, innovative teaching/learning tools.

CONTENT

1. **Description of the Course**

2. **Content and structure of the course**

3. **Tasks for summative assessment**

DESCRIPTION OF THE COURSE

1.1. The volume of the course in ECTS credits and its distribution in hours by the forms of organization of educational process and types of classes:

MARK ON THE SCALE OF THE HIGHER EDUCATION INSTITUTION		
90 – 100	A	excellent
80 – 89	B	good
70 – 79	C	
60 – 69	D	satisfactory
50 – 59	E	
26 – 49	FX	unsatisfactory with the possibility of re-assessment
0-25	F	unsatisfactorily with compulsory repeated study of the course

1.2. Characteristics of the course by form of study

Full-time and Part-time study

1.3. Course status

The course of the choice of the HEI

1.4. Prerequisites for studying the course

Geocultural Scientific Literacy is the final English-language course for the students, future English teachers in primary school. After studying a number of courses during their four-year-study for Bachelor's degree students have already obtained knowledge шт different English-language courses thus, developing the competece of using the English language correctly; mastering the ability of the future teacher (graduate) to solve standard and problematic professional issues that arise in the educational practice of primary

school, based on the formed knowledge about the theoretical foundations of the content and process of teaching English to younger students; learning general information about the English-speaking countries, and many other related subjects. Within this new course the students will use already gained knowledge additionally to the new one for the formation and development of professional (specific) competences and integrate innovative content in the practice of New Ukrainian School.

1.5. Year of study, semester

The second year of study for Masters's degree, Semester 1

1.6. Form of final control

Exam

1.7. Language of the course.

English

1.8. Internet address of the permanent placement of educational content of the course:

Educational content of the course "Geocultural scientific literacy" is available at - http://194.44.152.156/course/view.php?id=6

1.9. Developer.

Tetyana Blyznyuk – Candidate of Pedagogical Sciences, Associate Professor of Pedagogy of Primary

Education

1.10. Aims of the course .

The aims of the course is to increase the level of foreign language communication competence of students of pedagogical specialties on the basis of work with innovative teaching tools using English-language educational electronic resources; to expand the students' outlook on the geographical and cultural peculiarities of English-

speaking countries (Great Britain and the United States), scientific discoveries and achievements of prominent scholars; to prepare a creative, competitive specialist for realizing the acquired knowledge at the New Ukrainian school, capable of successfully adapting to new situations and making non-standard solutions.

1.11. Competences that are formed during the study of the course.

Integral Competence (CI) –
Ability to solve simulated tasks of pedagogical situations in future professional pedagogical activity on the basis of knowledge of theoretical aspects of the course, obtained practical skills of using innovative teaching tools; communicate (oral and written communication) in English for successful adaptation to new situations and the adoption of non-standard solutions.

Generic Competences (GC) –
GC-1. Ability to communicate in a foreign language;
GC-2. Knowledge of the use of information and communication technologies;
GC-3. Ability to creative search, non-standard solution of pedagogical problems and situations.

Professional (Specific) competences (SC) –
CS-1. Ability to use digital tools in an interdisciplinary context to address communicative and cognitive tasks in primary school education.

CS-2. Ability to actualize and apply acquired experience of English-speaking communication for its successful implementation in pedagogical communicative activities with primary school students.

CS-3. Ability to use modern educational technologies, innovative approaches in solving standard and problem methodological issues while teaching certain themes of an educational field or primary school subject.

1.12. Learning outcomes of the course.

Professional knowledge

Students explain the basic theoretical concepts of the course: literacy, geocultural literacy, scientific literacy, geocultural scientific literacy.

Students analyze the main statements of the New Ukrainian School and to substantiate the connection of geocultural scientific literacy with key competences in its concept.

Students apply leading innovative pedagogical technologies to create projects at primary school.

Students use innovative learning tools for formative assessment and project creation in primary school within the subject "I explore the world".

Professional skills and abilities

Students analyze, critically comprehend and logically substantiate the theoretical and video material (concerning the conceptualization of geocultural scientific literacy).

Students use innovative pedagogical technologies in primary school

for designing projects or fragments
of lessons.

Students create new educational content with innovative teaching/learning tools based on English-language educational electronic resources for primary school students.

Communication

Students communicate (orally and in written form) in English in the field of professional interests; independently carry out designing of English language behaviour in pedagogical situations.

Students apply various forms (monologue speech, group discussion, etc.) and methods (oral, written, non-verbal) of communication for the implementation of innovative pedagogical technologies and the latest teaching/learning tools in the educational process in primary school.

Autonomy and responsibility

Students design fragments of lessons using the innovative pedagogical technologies and tools in organizing the educational process in primary school.

Students independently apply the latest pedagogical technologies and tools of teaching at the interdisciplinary level in primary school, to construct a teaching/learning educational environment.

Students argue, defend their own decisions, self-develop and improve geocultural scientific literacy.

1.13. Control of academic achievements of students.

Means for diagnosing learning outcomes

Oral evaluation of theoretical concepts.

Creative work:

construction of a conceptual mind map,

developing of the model of geocultural scientific literacy,

creation and piloting in mini-groups of developed thematic testing of primary school students using the tool Kahoot for formative assessment;

multimedia presentation of the developed fragment of any lesson for primary school students based on the chosen innovative pedagogical technology;

multimedia presentation of the online service Kahoot and justification of its use in primary school for formative assessment of the students' results in different subjects;

project as a developed piece of educational content – game-cards "Guess Who?", as the integration of STEAM - topics in the primary school;

cteation of the video educational content: development of a fragment of a lesson in the subject "I Explore the World" with the help of the platform - Flipgrid;

Written work (essay-reflections, digests, glossary based on theoretical material of the course (tag cloud with Mentimeter), testing, module tests);

Independent work;

Exam.

CONTENT AND STRUCTURE OF THE COURSE

2.1. MODULE 1

GEOCULTURAL SCIENTIFIC LITERACY AND INNOVATIVE PEDAGOGICAL TECHNOLOGIES IN THE 21ST CENTURY

2.1.1. Theme 1

Definition and conceptualization of geocultural scientific literacy: main goal, tasks and expectations

2.1.2. Aims and expected learning outcomes.

Aims – to familiarize the students with a new concept – geocultural scientific literacy, exercise their listening and speaking comprehension skills on the topic.

Expected learning outcomes – 1) clearly define and argue the concept of geocultural scientific literacy; 2) analyze, critically comprehend and logically substantiate the theoretical and video material; 3) use Concept Map for creating the Model of GCSL; 4) create (together) Cloud of tags defining key terminology of Theme 1.

2.1.3. Criteria and forms for evaluating learning outcomes on the theme.

Table 1. Criteria for oral answer (formative assesment).

Criteria	Scoring Criteria	Total points 1 - 5	Student's points (1-5)
Relevance and thoroughness of the theoretical material (content development)	Logical sequence of presented informa-tion, accuracy and relevance of data	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Practical skills of using digital tools (Concept Map, Mentimeter) or other ICT.	Usage of digital tools is attention-getting, well selected	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Creative abilities in presenting English-language authentic material	Manner of the oral presentation, contact with the audience, good English lan-guage skills, visual aids, conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Communication skills with the other students and the teacher Reflection skills	The presenter involves and reaches the audience, felt feedback	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Score	Total points	20 (high level/excellent)	

Table 2. Criteria for the Model of Geocultural Scientific Literacy

Criteria	Scoring Criteria	Total points (1-5)	Student's points (1-5)
Organization of the answer presenting the Model	Logical sequence of presented information	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Content of the presented information	All structural elements of the Model are presented logically and thoroughly explained	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Creativity of the presentation	Manner of the presentation, contact with the audience, good English language skills, visual aids, correct use of Concept Map, conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Score	Total points	15 (high level/excellent)	

2.1.4. Digital tools.

Multimedia presentation

Concept Map (initial and final) – for designing the Model of geocultural scientific literacy

Mentimeter - Cloud of tags – for defining key terminology dealing with the topic of the lecture(practical)

Youtube video fragmants – for making the students concentrated on the topic

2.1.5. Innovative Teaching / Learning Technologies.

Flipped learning

Interactive technologies

Problem-oriented learning

Online learning

Network and media technologies

Use of opportunities of the ICR - Presentation Space will be used for delievering the lecture material, watching videos; IT Space for creating the Model of GCSL and Mobile Learning Space - for creating the Cloud of tags on the topic.

2.1.6. Lecture.

Definition and conceptualization of geocultural scientific literacy: main goal, tasks and expectations

Lecture 1 presents theoretical material on a new concept – geocultural scientific literacy where students take opportunity to express own or collaborative ideas on the topic. The lector presents different approaches to define GCSL and promotes students to explain its relevance for a future primary school teacher.

Purpose - define and conceptualize Geocultural Scientific Literacy as an academic course, single out objectives and expectations.

<center>Plan</center>

- Literacy: variety of scientific meaning and interpretations, relevance of the research topic;

- Scientific Literacy and Geocultural scientific literacy: various components and understanding of the notion

- Reflections on literacy in its versatility

The main results of the lecture meet the above-stated goals

Theoretical information

After studying a number of researches in cross-cultural interaction, we can definitely express a deep concern about the prevalent lack or even complete absence of thorough geographic and cultural (geocultural) knowledge among most students of higher educational institutions of both their own land and countries beyond it. Of course, this is not Geography and with this subject, we do not plan to teach students geographic location and features of the world countries. Our goal is to throw the light upon geocultural understanding between people communicating in the contemporary world of globalization. Our concern about this issue is rather caused by the lack of geocultural comprehension in the scientific world and consequently, misunderstanding, barriers, boundaries, mistakes, errors, made by people in education.

Geography provides the perfect grounds for understanding uniqueness of relationships between cultures, communities' members, natural environments, politics, history and other measurements. They all serve as the basis for studying many university disciplines.

Literacy is essential in helping us make sense of the world we live in. From the time we wake up to the time we go to bed, we are constantly making meaning of the world around us. Firstly, let us make clear understanding of the term *literacy* from different sources. The meaning of "literacy" in the English Dictionary is pretty obvious: this is the ability to read and write, and use arithmetic. Therefore, it seems that everybody has a good idea what literacy is. Nevertheless, together with traditional

understanding there are other important components of literacy, which today encompasses much more.

The original meaning of the English word 'literacy' is different from its translations in some other languages. In English history, the word 'literate' mostly meant to be 'familiar with literature' or, more generally, 'well educated, learned'. Only since the late nineteenth century has it also come to refer to the abilities to read and write text, while maintaining its broader meaning of being 'knowledgeable or educated in a particular field or fields'. Since the mid-twentieth century, scholars have given much attention to clarify the definition of *literacy.* Scientists in such wide-ranging disciplines as Psychology, Economics, Linguistics, Sociology, Anthropology, Philosophy and History have engaged in an ongoing and, at times, highly contested debate over the meaning and definition of the term 'literacy' and how it is related to the broader notions of education and knowledge. Taking into account these arguments, including the major traditions, critiques and approaches to literacy, we come to understand literacy as an autonomous set of skills; literacy as applied, practised and situated; literacy as a learning process; literacy as text. These broad areas of enquiry accommodate almost all theoretical understandings of literacy.

Alberta Education defines literacy as the ability, confidence and willingness to engage with language to acquire, construct and communicate meaning in all aspects of daily living. Language is explained as a socially and culturally constructed system of communication.

However, the modern term's meaning has been expanded to the ability not only use languages, numbers, images, computers, but many other basic means to understand, communicate, gain important knowledge, and to use the dominant symbol systems of a culture. The concept of literacy is expanding in many world countries to include skills to access knowledge through technology and to assess complex contexts. The key to literacy is reading development, skills of being able to understand spoken words, decoding written words for comprehending of some information. When these skills are acquired, the learner can gain complete language literacy. That is to be able to critically analyze printed information, write with accuracy and consistency, use text information for making decisions and solving problems, creating new contents and ideas. The inability to do so is called illiteracy.

The United Nations Education Scientific and Cultural Organization UNESCO gives the following definition for literacy – "the ability to identify, understand, interpret, create, communicate and compute, using printed materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society".

At the same time UNESCO emphasizes the goal of universal literacy under the motto "Literacy as Freedom", "reflecting the evolution of the concept of literacy: beyond its simple notion as a set of technical skills of reading, writing and calculating a plural notion encompassing the manifold meanings and dimensions of

these undeniably vital competencies. Such a view, responding to recent economic, political and social transformations, including globalization, and the advancement of information and communication technologies, recognizes that there are many practices of literacy embedded in different cultural processes, personal circumstances and collective structures".

In a report about adult literacy worldwide, the OECD (2000) claims that unlike many reports, the IALS (International Adult Literacy Survey) no longer defines literacy as "an arbitrary standard of reading performance" but rather "proficiency levels along a continuum denote how well adults use literacy to function in society and the economy." The OECD definition of literacy is: "the ability to understand and employ printed information in daily activities at home, at work and in the community – to achieve one's goals, and to develop one's knowledge and potential." Transnational studies – PIRLS and PISA – are increasingly significant in their impact on definitions of literacy, and on participating countries' literacy policies. PIRLS (Progress in Reading Literacy Study – fourth graders) defines reading ability as: "the ability to understand and use those written language forms required by society and / or valued by the individual. Young readers can construct meaning from a variety of texts. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment."

PISA (Programme for International Student Assessment – fifteen- year-olds) defines reading literacy as: "understanding, using, reflecting on and engaging with written texts, in order to

achieve one's goals, to develop one's knowledge and potential, and to participate in society."

Changes and development of technology in the world lead to multiplying of "literacies". Indeed, the word 'literacy' is often used to mean being generally competent at / having a reasonable knowledge of something. Many researchers understand literacy from another, quite a different perspective, as knowledge that is related to a specified subject (for example, computer *literacy* - knowledge of how to use a computer; or cultural *literacy* - knowledge of the culture you live in, assessment *literacy*, etc.). The following terms appear in the literature related to digital literacy:

- Digital literacy / digital information literacy
- Information literacy
- Library literacy
- Computer / information technology / electronic / electronic information literacy
- Media literacy
- Internet / web / network / hyper-literacy and more.

The term *scientific literacy* has been used in the literature for more than four decades (Gallagher & Harsch, 1997), although not always with the same meaning (Bybee, 1997). It is a simple term and its major advantage is that it sums up, at the school level, the intentions of science education. The term *scientific literacy* avoids the use of distracting detail and, as such, convincingly portrays a complex idea which intuitively appears to be correct (Baumert, 1997). Baumert recognizes that the core of the idea behind scientific literacy lies in its analogy with literacy. Many

definitions have been put forward for scientific literacy since Paul de Hard Hurd used the term in 1958 (American Association for the Advancement of Science [AAAS], 1989; Bybee, 1997; Gräber et al., 2001; Holbrook & Rannikmae, 1997; Hurd, 1958; Laugksch, 2000; National Science Education Standards [NSES], 1996; Organisation for Economic Cooperation and Development [OECD], 2003; 2007).

Norris and Philips (2003) stated that the term *scientific literacy* was used to include various components from the following:

•Knowledge of the substantive content of science and the ability to distinguish from non-science;

•Understanding science and its applications;

•Knowledge of what counts as science;

•Independence in learning science;

•Ability to think scientifically;

•Ability to use scientific knowledge in problem solving;

•Knowledge needed for intelligent participation in science-based issues;

•Understanding the nature of science, including its relationship with culture;

•Appreciation of and comfort with science, including its wonder and curiosity;

•Knowledge of the risks and benefits of science; and

•Ability to think critically about science and to deal with scientific expertise.

It is not easy to define the meaning of either the term *scientific literacy*, or scientific and technological literacy (a term

used in recognition of the relationship between science and technology in everyday life). This is especially the case when translating the term into languages other than English.

A forum on scientific and technological literacy for all (UNESCO, 1993) suggested the French term as "la culture scientifique et technologique," a translation that clearly reflects the cultural intention and points the way towards recognising that a person who is scientifically and technologically literate is a person who can function within society as a whole, rather than simply as a scientist in the workplace. As part of the Science-Technology-Society (STS) movement, the NSTA (1991) suggested that a scientifically and technologically literate person needs intellectual capability but that other attributes are also important. The components put forward were (subdivisions added by the authors for clarity).

However, there are many who see scientific literacy aligned with 'knowing science', limited to the intellectual components expressed above, and this view is particularly prevalent on the internet (those researches devote a central role for the knowledge of science). This idea is strongly supported by science teachers today.

There are scientists who see *scientific literacy* referring to a society usefulness. They interpret *scientific literacy* as a requirement to be able to adapt to the challenges of a rapidly changing society. This focus sees scientific literacy align with the development of life skills (Rychen & Salganik, 2003). It recognizes the need for reasoning skills in a social context, and above all,

this view states that scientific literacy is for all, having little to do with science teaching.

Bybee (1997) proposed a comprehensive hierarchical model still very much driven by the discipline of science, a more central position can be taken in which subject competence is important, but is propagated by general competences within education, and this is strongly supported by Project 2061 (AAAS, 1993). A further intermediary view for scientific literacy sees the general aim as being oriented towards societal requirements, to learn how to deal with social issues and to make rationally founded decisions.

The Gräber model for scientific literacy (2001), illustrated in Figure 1, is put forward as competency-based. The model reconsiders the balance between the various competencies and reflects on the specific contribution science education can make to the education of adults. This view upholds the need for scientific literacy to be far more than knowledge and integrates the component of values education as an essential component of science education (and although only an ethical component is mentioned, it can be seen to interrelate with human rights, tolerance, education for peace, gender equity, and the place of indigenous technologies).

But it contrasts, perhaps, with ideas that point to a need for education, and especially science education, to play a strong role in the development of responsible citizens. In this area, scientific literacy would need to encompass socio-scientific decision-making skills (Holbrook, 1998; Holbrook & Rannikmae, 2007; UNESCO, 2003) as an area above and beyond scientific problem solving.

Figure 1. The Gräber model for scientific literacy
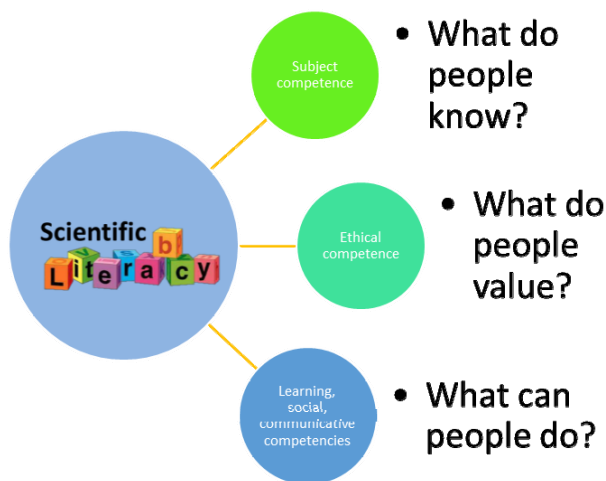
Different definitions gave emphasis to different notions. By introducing such a term, there are contrasts with the definition put forward in the ICASE-UNESCO forum on scientific and technological literacy for all (UNESCO, 1993, p.15) as "The capability to function with understanding and confidence, and at appropriate levels, in ways that bring about empowerment in the made world and in the world of scientific and technological ideas." Both differ from a definition covering scientific and technological literacy, put forward as (Holbrook and Rannikmae, 1997, p 15): "Developing the ability to creatively utilize sound science knowledge in everyday life or in a career, to solve problems, make decisions and hence improve the quality of life."

All, however, see the need for scientific literacy to relate to an ability of functionality as a citizen within society (at home, at work, in the community), not purely at a knowledge level, but in making decisions and acting as a responsible person. Only the last,

however, may be suggested as emphasising socio-scientific decision making, where it is not the changes to the natural world alone that are the focus, but also the way of thinking.

After thorough analysis of a wide range of definitions and interpretations of literacy in world theory and practice, we will attempt to offer one more field of knowledge – geocultural scientific literacy. In our understanding, *Geocultural scientific literacy* implies the multisided competence of an individual's awareness of place, orientation, cultural understanding and ability to distinguish and critically evaluate spacial relationships in the international community for scientific decision-making, problem solving, developing one's own knowledge and potential, active participating in local and world community and general scientific lifelong education. It is built upon the most fundamental geographic, cultural, historic skills such as locating places, understanding the geocultural context of current events, developing a spacial perspective, thinking ability beyond one's own culture and learning to use innovative education, geographic and scientific tools (maps, global information systems, active learning resources, apps, and so on).

Taking into account the definition above, we may introduce **the main purpose** of *Geocultural Scientific Literacy,* which is to acquaint students with cultural and geographical features of some countries, trends and prospects of international politics in the conditions of globalization. Virtually we will introduce students major cities around the world; latest developments in world education and present experience of implementing modern information and communication technologies that future teachers can use at

primary school. The course also aims at improving students' geocultural scientific literacy through enhancing their knowledge of English by using innovative teaching tools based on English-language electronic resources.

2.1.7. Seminar / practical / laboratory classes 1-2.

Definition and conceptualization of geocultural scientific literacy: main goal, tasks and expectations

Practical classes 1-2 are oriented at making the students aware of the meaning of the notion of geocultural scientific literacy, enrolling them in team work and improving their listening and speaking skills of English, using new key notions.

<div align="center">

For students' creative thinking

</div>

✠ We offer you a video that is an exploration of the definition of literacy: more specifically, of what it means to be a literate person in the 21st century. Both producers are reflective practitioners who have strong literacy backgrounds. As practising teachers, they have a vested interest in this subject. The producers realize that new media in a technological world is shaping the lives of youth and that as a result, redefining the literacy skills that will be necessary for youth to be able to function successfully in the world they are growing up in. The latter implies, by necessity, that the how, what and why of teaching literacy must also change. As a result of having the supposed static, print-centric notion of literacy upturned, the producers became interested in finding out if other educators at their worksites were experiencing this shift and in exploring how these educators were grappling with the notion of

what it means to be a literate person and the corresponding implications in terms of their own teaching practise.

➕ Watch the video and try to answer the following questions.

Were they indeed rethinking what it means to be literate in an information and communication technological world, or upholding the traditional print-centric, paper and pencil viewpoint?

What does it mean to be literate in the 21st century?

Is an important and relevant issue that invites dialogue from all practising educators who work with youth?

The world is changing and schools are required to make those changes necessary to help youth become fully competent, critical, and thoughtful citizens in the world they live in (https://www.youtube.com/watch?v=Wn0_H-kvxkU).

➕ Watch this video (https://www.youtube.com/watch?v=MJe5s1-u_70) and comment on your personal understanding of literacy. Try to suggest your own definition of literacy and explain what literacy means for you.

➕ After watching this video (https://www.youtube.com/watch?v=242RUZkM6No), try to think and reflect on the meaning of literacy in the social context.

➕ These Literacy videos highlight the many roles of literacy in helping us acquire, communicate, connect and create meaning in our digital world (https://education.alberta.ca/literacy-and-numeracy/literacy/everyone/literacy-videos/.) Comment on them.

Expected students' activities: presenting personal or team understaning of the concept of Geocultural scientific literacy; using

Concept Map (initial and final) for creating the Model of GCSL; practicing digital tool Mentimeter for creating the Cloud of tags defining key terminology on the theme and other educational purposes

Instructions for students: learn criteria for assessment of learning outcomes, practice the tool Concept map, train to use a digital tool Mentimeter, arrange a brief glossary for the theme, analyze the key terminology mentioned in the Cloud of tags with Mentimeter.

2.1.8. Topics for individual and / or group tasks (if any).

Oral justification of theoretical concepts, learning to design a mind map (using Concept Map).
Development of the Model of Geocultural scientific literacy.
Get acquainted with a digital tool Mentimeter and its types of presentations.
Preparation of thematic glossary in English (Mentimeter – Cloud of tags).

2.1.9. Tasks for independent work.

Define and conceptualize the concept of geocultural scientific literacy.
Argue, and logically structure the key terminology on the topic for the design of the thematic glossary in English (Mentimeter – Cloud of tags).

Generate own ideas for the development of the model of Geocultural scientific literacy with the help of technology of concept mapping. Select and be ready to present English-language video material for the topic

Table 3. Criteria for students' independent work

Criteria	Scoring Criteria	Total points 1 - 5	Student's points (1-5)
Relevance and thoroughness of the theoretical material presentation (content development)	Logical sequence of presented information, accuracy and relevance of data	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Practical skills of using digital tools	Usage of digital tools is attention-getting, properly selected	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Creative skills in presenting English-language domestic and authentic material	Manner of the presentation, contact with the audience, good English lan-guage skills, audio-visual aids	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Usage of Ukrainian and foreign sources (including printed and audio material, etc.)	Variety of sources used in independent work	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Score	Total points	20 (high level/excellent)	

2.1.10. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

2.1.11. Theme 2

New Ukrainian School and understanding the reflection of geocultural scientific literacy in its conception.

2.1.12. Aims and expected learning outcomes.

Aims – to present and collaboratively discuss with students the Concept of the New Ukrainian School (its main objectives and key competences to be formed in primary school children); prove the relevance of GCSL within the Concept; promote students' skills to analyze and evaluate the importance of using innovative pedagogical technologies in primary school.

Expected learning outcomes – 1) explain the relevance of GCSL within the Concept of the New Ukrainian School and examine the key competences; 2) argue the importance of using formative and summative assessment of learning outcomes at primary school (on the examples of Ukrainian, British and American sources); 3) write a paper work on the suggested topic.

2.1.13. Criteria and forms for evaluating learning outcomes on the theme (for oral See Table 1):

Table 4. Criteria for the written work.

Criteria	Scoring Criteria	Total points 1 - 5	Student's points (1-5)
Introduction of the topic and its relevance,	Logical sequence of presented written information, accuracy and relevance of data in the main body	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Conclusions	attention-getting and well arranged	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Grammar and spelling	English language written skills	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Citations and sources used for the written paper	The presenter uses variety of sources and citations	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Score	Total points	20 (high level/excellent)	

2.1.14. Digital tools.

Ppt

Youtube video material (on formative assessment)

Mentimeter

2.1.15. Innovative Teaching / Learning Technologies.

Interactive technologies

Problem-oriented learning

Network or media technologies

Use of opportunities of the ICR - Presentation Space will be used for delievering the lecture material, watching videos; IT Space for working with PCs on creating multimedia presentations on the topic and Mobile Learning Space - for creating the Cloud of tags on the topic.

2.1.16. Lecture.

New Ukrainian school and understanding the reflection of geocultural scientific literacy in its conception.

Lecture 2 familiarizes the students with key objectives of the Concept of the New Ukrainian School, its main expectations and key competences to be formed in primary school children. The lector explains students the relevance of GCSL for a future primary school teacher and introdces major innovative pedagogical technologies in the teaching/learning process.

Purpose - explain relevance of the Concept of the New Ukrainian School to such a skill of a modern primary school teacher as GCSL; acquaint students with peculiarities of teaching generation Z and necessity of using innovative pedagogical technologies in the teaching process.

Plan

- Reflections on GCSL and its connection to the Concept of the New Ukrainian School

-      Contemporary primary school children as compared to other generations and key competences to be formed

-      Innovative pedagogical technologies in primary school (on the examples of Ukrainian, British and American sources)

-      Necessity of using digital tools at school lessons

The main results of the lecture meet the above-stated goals

Theoretical information

A well-known author and Pulitzer Prize winner Thomas Friedman recently remarked on the global business environment of the near future, "the kind of [global] competition our kids will face will be intense and the social implications of not repairing things will be enormous." Mary O'Hara-Devereaux, a global futurist and globalization expert, likewise stated in 2004 that cultural understanding - such as geocultural literacy - is the cornerstone of any successful global worker and that currently the United States is being seriously challenged by Europe and Asia in this area. The mentioned issue is global.

According to experts, in the short-term perspective, professionals who are able to learn throughout life, think critically, set and achieve goals, work in teams, communicate in a multicultural environment and possess other contemporary skills, will be the most successful in the labour market. However, today's Ukrainian school does not equip pupils with those skills. The way of teaching in contemporary Ukrainian schools does not motivate children to learn. Textbooks are too theoretical and overburdened with secondary factual material. Teachers use mostly outdated

teaching methods. They lack real motivation for personal and professional growth.

The digital distance between teachers and pupils is growing. Many teachers are just not able yet to research problems using modern methods, to work with large data arrays, to make and present conclusions, to collaborate online on educational, social and academic projects, and so on. [New Ukrainian School, p. 4].

Nowadays educators deal with completely different children than, let us say, 30-50 years ago. These new generations have their names, let us reflect about them. Generation X born: 1966-1976, coming of Age: 1988-1994, age in 2004: 28 to 38.

Members of Generation X were children born during a time of shifting societal values. That is why, this Generation was exposed to lots of daycare and divorce. Gen X is often characterized by high levels of skepticism. Gen Xers are hardly the best-educated generation with 29% obtaining a bachelor's degree or higher (6% higher than the previous). Moreover, with that education and a growing maturity they started to form families with a higher level of caution and pragmatism than their parents demonstrated. Concerns run high over avoiding broken homes, kids growing up without a parent around and financial planning.

Thus we, teachers, mostly representatives of Generation X, do not understand our students' behaviuor and even the language they are speaking. However, this generation has an increased understanding of technologies as they grew up in the computer boom age.

Generation Y, Echo Boomers or Millennials, born: 1977-1995, coming of age: 1998-2006, age in 2004: 10 to 22.

Firstly, try to understand Millennials. We can find different terms for such kids as Millennials, Generation Y or the Net Generation. These terms are usually considered to apply to individuals who reached adulthood around the turn of the 21st century (born between 1982 and 2004). Millennials grew up in an electronics-filled, increasingly online, and socially networked world. They are the generation that has received the most marketing attention. As the most ethnically diverse generation, Millennials tend to be tolerant of difference. Millennials grew up with computers, the Internet and the graphical user interface. Gen Y kids are known as incredibly sophisticated, technology wise, immune to most traditional marketing and sales pitches...as they not only grew up with it all, they've seen it all and been exposed to it all since early childhood.

Generation Z, born: 1995-2012, coming of age: 2013-2020, age in 2004: 0-9.

For us teachers it is even more difficult – a new generation! While we don't know much about Gen Z yet...we know a lot about the environment they are growing up in. This highly diverse environment will make the grade schools of the next generation the most diverse ever. Higher levels of technology will make significant inroads in academics allowing for customized instruction, data mining of student histories to enable pinpoint diagnostics and remediation or accelerated achievement opportunities.

Gen Z kids will grow up with a highly sophisticated media and computer environment and will produce more Internet practical understanding and expertize than their Gen Y forerunners.

Other characteristics of Generation Z as a cohort within the U.S., in contrast with earlier generations:

• More racial diversity.

• Less traditional (nuclear) family backgrounds, more single-parent and same-sex parent families.

• More likely to have friends from various ethnic, religious and racial groups.

• More risky.

• Less confident in the current economic system.

• More inclined to entrepreneurialism.

• More religious.

• Spend more time online.

• Use phones more than television for entertainment.

More to come on Gen Z. Therefore, we must stay tuned. Whatever the generation is, we have to offer teaching-learning process for the next generation of Ukrainians that will be contemporary and meaningful for them.

But what comes after X, Y and Z? Researchers consider there must also be a name for the generation that follows Generation Z and some defining characteristics. A social researcher Mark McCrindle (2005) defines the generation as those born from 2010 to 2024.

While the traits that come to define generations often don't start to manifest until their members' adolescence or early adulthood, it's possible to identify certain notable features of Generation Alpha at this point. He mentions that "this generation of children will be shaped in households that move more frequently, change careers more often and increasingly live in urban, not just suburban,

environments". Racial diversity is another feature of the newest generation thus, having a high share of children with foreign-born parents and children who are foreign-born themselves, representing more countries around the world than previous generations. McCrindle also believes those in Generation Alpha will stay in education longer, start their earning years later and thus live at home with their parents later than was previously the case — even into their late 20s. Another element that helps define Generation Alpha is technology. McCrindle's birth year start date of 2010 happens to be the year the iPad was released, Instagram was launched and more. He believes the omnipresence of technology in those formative years leads to increased digital literacy and gamification of learning but also shorter attention spans and impaired social formation. "[They] have been raised as screenagers to a greater extent than the fixed screens of the past could facilitate," said McCrindle. "For this reason, we also call them Generation Glass because the glass that they interact on now and will wear on their wrist, as glasses on their face, that will be on the Head Up Display of the driverless car they are transported in, or the interactive school desk where they learn will transform how they work, shop, learn, connect and play."

These advancements mean that technology for Generation Alpha "is not something separate from themselves, but rather, an extension of their own consciousness and identity," said Natalie Franke, the head of community at the business management platform HoneyBook. She believes many people in this generation may prefer the virtual world to the physical world and that they'll also have more opportunities for creativity.

Considering the mentioned information, we are sure of the importance in the formation this kind of integrated literacy as geocultural scientific literacy. We definitely emphasize the lack of sufficient knowledge in this context, which may have an irreversible effect on modernization of education system in Ukraine, based on competency educational content. According to New Ukrainian School Concept, scholars has taken into account Recommendations of the European Parliament and European Council on key competencies for lifelong learning. Those Recommendations define eight groups of competencies. Key competencies are those that everyone needs for personal fulfillment, development, an active role in the community, social involvement, and employment, and that can secure personal attainment and self-actualization throughout life.

The most crucial for formation of geocultural scientific literacy are actually all of them. However, some we would like to emphasize:

Communication in foreign languages. The ability to understand adequately concepts expressed in a foreign language, to express both in speech and in writing the ideas, thoughts, feelings, facts and views. By listening, speaking, reading and writing in a broad range of societal and cultural contexts. The skills of direct activity and intercultural communication.

Competencies in Science and Technology. A scientific understanding of nature and modern technology, as well as the ability to use it in practical terms. The ability to apply scientific methods to observe, analyze, formulate hypotheses, collect data, conduct experiments and analyze their results.

ICT and digital competencies envisage confidence and critical appraisal in the use of Information and Communication Technology (ICT) to produce, research, process and exchange information at the workplace, in the public domain and in personal communication. Information and media competence, the fundamentals of programming, algorithmic thinking, working with databases, and skills in Internet security and cyber security. Understanding of the ethics in information processing (copyright, intellectual property, etc.).

Lifelong learning skill. The ability to search and master new knowledge, to gain new skills, to organize an educational process (individually and in groups), in particular, through effective resource and information flow management, an ability to set educational goals and determine means to achieve them, to build one's own educational and professional trajectory, to appraise your own educational achievements, and to learn throughout life.

Cultural awareness. The ability to appreciate objects of art, form one's own artistic tastes, independently express ideas, experiences and feelings towards art. This competence envisages a deep understanding of each person's own national identity as a basis for an open attitude and respect for the diversity of the cultural expression of others.

Social and civic competencies. All forms of behaviour that are needed for effective and constructive participation in society, in the family, and at work. The ability to work with others to achieve results, to prevent and resolve conflicts and reach compromises. Respect for the law, human rights and support for social and cultural diversity.

Environmental awareness and healthy lifestyles. The ability to use natural resources in a prudent and rational way within the framework of sustainable development, the realization of the role of the environment in human life and health, and the ability and willingness to live a healthy lifestyle [New Ukrainian School Concept, p.11-12].

The process of globalization does more to actually emphasize the local within the global at various levels of social activity, and, moreover, that high-tech, globe-trotting "global culture" is a socio-economic privilege of the very few. So whether observed as "geopolitical," "geocultural," "cross-cultural," "linguistic", "scientific" or otherwise on the surface, this type of literacy should be mentioned critical as the cornerstone of a global sustainable development.

The research shows the results of a survey in which 18- to 21-year-olds in Precarpathian national university were asked firstly to name and then to use a map of world and find the countries which often appear in the news: the USA, Germany, Japan, China, Russia, France, Great Britain, Belgium and Ukraine. On average, the group of students surveyed could find only some of the offered countries, with only six percent identifying all the countries correctly and 21 percent not able to find any at all.

These reported results essentially confirm what has already been well realized and highlighted in international media: the geocultural literacy of our citizens between the ages of 18 and 24 is in a serious state of fallibility, particularly in the context of becoming effective global workers and citizens. Similar is the situation with other countries as the USA, and more.

As the director of undergraduate studies at the geography department at the University of Miami, Tom Boswell emphasizes, "we are being forced to function in a global economy, so it really pays to know your way around the world. Geography is a field that has slipped between the gaps. As a result, the rest of the world knows a lot more about the rest of the world than we do." So, as these young survey recipients enter the public and private sectors of society, we must consider this key

question: What happens when geoculturally illiterate young adults mature into geoculturally illiterate professionals and politicians in a globally competitive workforce?"

Because of the great diversity of global cultures, it is almost predictable that differences in viewpoints will occur and conflicts may arise in different spheres of interaction, and education is not the exception.

In the end, the evidence is clear that a lack of geocultural scientific literacy is a real and relevant problem in today's education environment. It affects a wide variety of individuals; and it leads to mistrust and misunderstanding between people in Ukraine and abroad, which yields negative impacts on public image.

Continuous professional development of a future teacher refers to the overall framework of opportunities that facilitate a life long learning practice, driven by the learner student and supported by a university teacher. Designers of the university courses as well as primary school teachers must choose from and combine a wide range of methodologies and new technologies, depending upon the needs of their learners and the objectives of

the intended education. Today educators try to implement such innovative technologies in the education process as:

"Flipping" a classroom entails switching up the usual model through which students encounter new knowledge. In a flipped classroom, students have required reading or lecture videos before the class meets, and then class time is used for discussions, problem-solving, or other kinds of active learning that will help them actualize and assimilate this new knowledge.

Project-based learning is a method of learning that, for some time, students learn and respond to real, interesting, and complex questions and get the knowledge and skills they need. Project-based training provides the following: students apply knowledge and skills to solve realistic problems in the real world; the level of student's responsibility for the amount of work performed is increased; teachers perform the role of coaches and research facilitators, conduct reflections; often students work in pairs or groups.

Game technology is one of the unique forms of learning that makes it interesting and exciting not only the work of students at the creative-search level, but also everyday steps in the study of subjects.

Problem-based learning (PBL) is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. The PBL process does not focus on problem solving with a defined solution, but it allows for the development of other desirable skills and attributes.

The goal of ***interactive learning*** is to create comfortable learning environments in which the student feels successful, their intellectual excellence, which makes the educational process itself productive.

Query-based learning– the process of constructing students' knowledge by formulating their own questions and finding answers to them. It is the student who asks questions, answers them, discusses the results with others, improves his own knowledge, looks for ways to use it in new conditions, ponders the process of cognition and ways to improve his own thinking.

Information technologies need to be used in classrooms in order to interest students in learning, to diversify the educational process, to go beyond the traditional learning as today's students need different innovative forms of work.

2.1.17. Seminar / practical / laboratory class 3.

New Ukrainian school and importance of geocultural scientific literacy skills for a new generaton.

Practical class 3 is oriented at forming students' ability to argue key objectives of the Concept of the New Ukrainian School; identifying its main expectations and key competences to be formed in primary school children; enrolling students in team work and improving their all English language skills, using new key notions. Students find material and compare representatives of new generation Z and Alpha in Ukraine and English speaking countries (lifestyle, values, reasons for making achievements, etc.).

For students' creative thinking

🔱 How and what kind of measures can we use to change the situation around geocultural scientific literacy?

🔱 Is this kind of literacy really urgent for different generations?

🔱 Do we notice differences between school children born in different years?

🔱 Do we believe in changes that New Ukrainian School promises to bring about in education system?

Find info about generation Alpha and be ready to speak about it!

Let us answer these questions after watching the following videos:

https://www.youtube.com/watch?v=AHsXa4TgXTo&t=21s

https://www.youtube.com/watch?v=aqdm6aBUZII&t=11s

https://www.youtube.com/watch?v=TtIojDWOsgg

🔱 Analyze efficient innovative technologies after watching the videos:

https://www.youtube.com/watch?v=JMLsHI8aV0g

https://www.youtube.com/watch?v=K5IT3uuF4Gk

https://www.youtube.com/watch?v=K5IT3uuF4Gk

https://www.youtube.com/watch?v=kTLLRbceDoM

Expected students' activities: presenting personal or team understaning of New Uraininan school objectives, its representatives as new generation Alpha taking into account geocultural peculiarities; using youtube videos for comparison between the generation in Ukraine and English speaking countries

and necessity to change the direction in teaching process; project work on a suggested topic.

Instructions for students: learn criteria for assessment of learning outcomes, prepare information for the essey, watch and analyze the suggested or/and prepared video material on the problem raised, arrange a brief glossary on the theme.

2.1.18. Topics for individual and / or group tasks (if any).

Oral announcement of the key competences of the New Ukrainian school and

the ability to theoretically justify their connection with the concept of Geocultural scientific literacy on the basis of analysis of video material.

Project work on the topic (ppt, oral-iindividual reflection or essey).

(For criteria of the oral answer see Table 1, written work see Table 4).

2.1.19. Tasks for independent work.

Identify and interpret the key statements of the New Ukrainian School (NUS) Concept

Analyze in what way geocultural scientific literacy is presented in the Concept of NUS.

Analyze video material on formative assessment and be ready to discuss.

Compare traditional model of evaluation of students' learning outcomes with formative and summative assessment.

Search for digital tool suitable for formative assessment in primary scholl, make the list and be ready to present on the following prsctical classes.

Select the material for writing a test work on the topic using various sources. (For criteria see Table 3).

2.1.20. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

2.1.21. Theme 3

Innovative pedagogical technologies in primary school

2.1.22. Aims and expected learning outcomes.

Aims – to acquaint students with innovative pedagogical technologies suitable for primary school teaching /learning process, summarize the material of Module 1.

Expected learning outcomes - students analyze the relevance of using innovative pedagogical technologies in primary school, compare main principles of different technologies; develop and present the example of the use of one innovative pedagogical technologies at a primary school lesson ("English", "I Explore the

World"); independently carry out designing of English language behaviour in pedagogical situations; Module test 1.

2.1.23. Criteria and forms for evaluating learning outcomes on the theme (for oral answer see Table 1):

Table 5. Criteria for creative work presentation.

Criteria	Scoring Criteria	Total points (1-5)	Student's points (1-5)
Organization of the answer presenting the innovative pedagogical technology	Logical sequence of presented information	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Content of the presented information	Introduction is attention-getting, good lay out of the innovative pedagogical technology, accuracy and relevance of information according to the chosen lesson in primary school, demonstrating practical examples	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Creativity of the presentation	Manner of the presentation, contact with the audience, good English language skills, visual aids or / and use of ICT, conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable - 2	
Score	Total points	15 (high level/excellent)	

Table 6. Criteria for Module test 1.

Criteria	Scoring Criteria	Total points
Excellent	Answer is complete; factually correct, sufficient detail provided; answer focuses only on issues related to the question;	5
Good	Answer is brief with insufficient detail. Unrelated issues were introduced with minor errors in content	4
Acceptable	Answer is incomplete. Excessive discussion of unrelated issues and/or significant errors in content	3
Unacceptable	Weak organization with no answer to the question; none of the relevant details were included	2
Score	Total points	5 (high level/excellent) – 10%

2.1.24. Digital tools.

Ppt

Youtube

Mentimeter (for voting for the best introduction of the innovative technology)

Up to the students' choice

2.1.25. Innovative Teaching / Learning Technologies.

"Flipped learning", technology of "peer assessment", problem-oriented learning, project technology, inquiry based learning

technology, interactive technologies, network and multimedia technologies, etc. (on the choice of students).

Use of opportunities of the ICR - Presentation Space will be used for delievering the theoretical material accompanied with multimedia presentation; Conference Space for presenting results of independent work on any innovative technology for the use in primary school and for writing Module test 1.

2.1.26.   Lecture.

None

2.1.27. Seminar / practical / laboratory classes 4-5.
Innovative pedagogical technologies in primary school

Practical classes 4-5 are oriented at forming students' ability to argue importance of using innovative pedagogical teaching technologies at primary school, main benefits for primary school children; enrolling them in creative work by presenting the most efficient innovative pedagogical teaching technologies for the lessons of "English" or/and "I Explore the World" for promoting geocultural scientific literacy of primary school children; summarizing the material of Module 1 in the written work.

For students' creative thinking

➕   Analyze efficient innovative technologies after watching the videos:
https://www.youtube.com/watch?v=JMLsHI8aV0g

https://www.youtube.com/watch?v=K5IT3uuF4Gk
https://www.youtube.com/watch?v=K5IT3uuF4Gk
https://www.youtube.com/watch?v=kTLLRbceDoM

Expected students' activities: announcing the list of well-known innovative pedagogical teaching technologies often used in Ukraine and English speaking countries, presenting one technology with examles of its using at a primary school lesson

Instructions for students: learn criteria for assessment of learning outcomes, arrange a glossary for the theme, prepare for Module test 1.

1.1.28.   Topics for individual and / or group tasks (if any).

Individual presentation of the list of advanced innovative pedagogical teaching technologies that can be used in primary school.

Development and individual presentation at the practical class of one of innovative pedagogical technologies with examples of its use in primary school

(For criteria of the oral answer see Table 1, multimedia (creative work) presentation see Tables 5,7, 8; criteria for Module test work 1 see Table 6).

2.1.29. Tasks for independent work.

Report on innovative pedagogical teaching technologies: their essence and classification.

Select the material on the effective use of innovative pedagogical teaching technologies in primary school (domestic and English language sources).

Define the basic principles and peculiarities of the use of the technology of "flipped learning", technology of "peer assessment", problem-oriented learning, project technology, inquiry-based learning technology, interactive technologies, network and multimedia technologies, etc.

Revise the content of Module 1 for writing modular test work (for criteria see Table 6)

(For criteria see Table 3).

2.1.30. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

2.2 MODULE 2.

USE OF INNOVATIVE TEACHING/LEARNING TOOLS IN PRIMARY SCHOOL

2.2.1. Theme 1

Online service Kahoot as a partner collaboration tool: usage opportunities, guidelines for developing educational content

2.2.2. Aims and expected learning outcomes.

Aims – to acquaint students with online service Kahoot, its possibilities for using in primary school for promoting geocultural scientific literacy of children.

Expected learning outcomes – 1) apply online service Kahoot for formative assessment, collaboration and feedback at primary school; 2) create own Kahoot as the fragments of lessons for primary school students; develop a guideline for using Kahoot.

2.2.3. Criteria and forms for evaluating learning outcomes on the theme (for oral presentation see Table 1):

Table 7. Criteria for multimedia presentation:

Criteria	Scoring Criteria	Total points	Student's points
Organization of the oral answer	Logical sequence of presented information in ppt	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	

Content of the answer	Introduction is attention-getting, good lay out of the problem, accuracy and relevance of information according to the chosen lesson in primary school, demonstrating practical examples of using Kahoot tool	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Creativity of the multimedia presentation	Manner of the presentation, contact with the primary school audience, good English language skills, visual aids, use of ICT (video, audio, etc), conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Score	Total points	15 (high level/excellent)	

2.2.4. Digital tools.

Multimedia presentation

Youtube video (up to students' needs)

Online service Kahoot

Mentimeter

2.2.5. Innovative Teaching / Learning Technologies.

Online teahing/learning

Network and multimedia technologies (mobile teaching/learning)

Problem-oriented learning

Use of opportunities of the ICR - Presentation Space will be used for delievering the lecture material, watching videos; IT Space for

practicing using Kahoot and getting feedback from the teacher and groupmates; Mobile Learning Space - for developong the guideline for using Kahoot; Conference Space for presenting results of creative work on the fragment of a lesson for primary school students.

2.2.6. Lecture.

Online service Kahoot and its pedagogical potential

Lecture 3 familiarizes the students with an interesting digital tool and online service Kahoot.

Purpose - explain benefits and advantages of using Kahoot at primary school lessons; train students in cteating own Kahoots for making quizes and surveys at a particular topic or fragment of the lesson

Plan

- Online service Kahoot – its advantages and benefits for using in primary school

- Guidelines for creating a quiz with Kahoot for primary school lessons

- Guidelines for creating a survey with Kahoot for primary school lessons

- Kahoot for formative assessment of primary school students' academic achievements

The main results of the lecture meet the above-stated goals

Theoretical information

Extensive study and analysis of the state of informatization and computerization of education has shown us that today active teachers-practitioners, who "keep up" with time and reforming

education, regularly use electronic educational resources to form digital competence of primary school students and implement new forms of learning: mixed, electronic, mobile or network (Blyznyuk T., Slyusarchuk T., 2019).

The Kahoot! is an interesting and interactive resource, which integrates gaming and learning. Kahoot! is a free educational platform that is suitable for teaching/studying any discipline/subject students of both general secondary education institutions and students of higher education institutions, thus this EER is suitable for studying any subject at any education institution. It can be used for conducting testing and independent work, quick surveys, individual and group discussions, for traditional or formative assessment and reflection.

Working with this resource, the teacher finds out that the system offers several types of Kahoot! We can use it to create quizzes, surveys and tests. The teacher has the perfect opportunity to monitor and analyze student responses and general progress, because the results are automatically saved and can be displayed in the MS Excel editor. This EER gives the educator exclusive opportunity to analyze students' mistakes or difficulties in answering the questions thoroughly. For example, the teacher can see which questions proved to be complicated and took much time to answer.

Another huge advantage of this open EER for teachers is that the service has a selection of ready-made tests in numerous subjects and their topics that can be used by those who are registered for free in their own lessons.

However, everyone knows that in reality, many schools are practically not equipped with sets of technical means, and not always

every student has a smartphone or carries it to school. In such a situation electronic resource Kahoot! provides a solution to this problem and offers the teacher a strategy for interaction with the whole class, when only the teacher has a laptop, phone or tablet.

Thus, we can conclude that systematic use of Kahoot! in the educational process is not only a valuable means of feedback, but also a perfect tool for formative assessment. Therefore, the teacher does not only assessments and tests the knowledge acquired by the student, but also prevents the development of fear of error and, accordingly, promotes student's confidence, celebrates any success of the student and focuses only on strengths, not on mistakes and failures, encourages students to achieve goals and the highest learning outcomes.

In the context of formation students' digital competence, the electronic educational resource Kahoot! helps develop skills of rapid mastery of technology, the junior student learns to analyze and critically evaluate information or digital content, as well as develops the ability to interact in the digital environment with the help of modern technologies.

2.2.7. Seminar / practical / laboratory classes 6-7.
Online service Kahoot as a partner collaboration tool: usage opportunities, guidelines for developing educational content
Practical classes 6-7 are oriented at forming students' ability to use online service Kahoot at primary school for promoting geocultural scientific literacy of children; train students in creating a quiz (survey) with Kahoot for primary school lessons; enrolling

them in creative work by presenting the fragments of primary school lessons; promoting online learning/teaching

Expected students' activities: expressing personal observations from using online service Kahoot, presenting the examle of its using at a primary school lesson, practicing to work with Kahoot, designing guidelines for creating educational content (tests, quizes, and discussions) for primary school students

Instructions for students: learn criteria for assessment of learning outcomes, cteate a piece of educational content for primary school with Kahoot, arrange a brief glossary for the theme.

2.2.8. Topics for individual and / or group tasks (if any).

Multimedia presentation of the Kahoot online service and justifying its use in primary school.

Developing practicing skills for creating educational content for primary school students.

Creation and piloting of the developed case-testing of primary school students' knowledge in a chosen subject ("English", "I Explore the World") using the Kahoot tool

(For criteria of the oral answer see Table 1, multimedia presentation see Table 7).

2.2.9. Tasks for independent work.

Analyze online service Kahoot - a partner collaboration tool.

Argue that online service Kahoot is a suitable tool for formative

assessment of students' knowledge.

Demonstrate possibilities of using the Kahoot tool in primary school.

Design a guideline for creating educational content (tests, quizes, and discussions) for primary school students using the Kahoot tool.

Create own Kahoot for primary school students

(For criteria see Table 3).

2.2.10. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

2.2.11. Theme 2

STEAM integration in the learning process by means of the game-cards "Guess Who?": guidelines for developing educational content.

2.2.12. Aims and expected learning outcomes - to acquaint students with idea of the offline game-cards "Guess Who?" and mention their possibilities for promoting geocultural scientific literacy in primary school; develop the educational content creating the cards with English, American and Ukrainian scientists and their inventions.

Expected learning outcomes – 1) create 5 game-cards according to the scheme; apply offline game-cards "Guess Who?" at primary school lessons ("I Explore the World" or "English") for analyzing geographical, scientific and cultural differences of the native land and the English-speaking countries (Great Britain and the USA); 2) demonstrate own game-cards "Guess Who?" as the fragments of a lesson for primary school students; 3) develop a guideline for using game-cards "Guess Who?"; 4) demonstrate geocultural scientific literacy in English-language communication and independently apply the innovative digital tools of teaching at the interdisciplinary level

2.2.13. Criteria and forms for evaluating learning outcomes on the theme (for oral presentation see Table 1)

Table 8. Criteria for multimedia presentation.

Criteria	Scoring Criteria	Total points
Organization of the oral answer	Logical sequence of presented information in ppt	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2
Content of the answer	Introduction is attention-getting, good lay out of the problem, accuracy and relevance of information according to the chosen lesson in primary school, illustration of practical examples of using game-cards "Guess Who?"	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2
Creativity of the multimedia presentation	Manner of the presentation, contact with the primary school audience, good English language skills, visual aids, use of ICT (video, audio, etc), conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2
Score	Total points	15 (high level/excellent)

2.2.14. Digital tools.

Multimedia presentation
Offline game-cards "Guess Who?"
Mentimeter

2.2.15. Innovative Teaching / Learning Technologies.
peer assessment
problem-oriented learning
inquiry based learning technology
interactive technologies
network and multimedia technologies

Use of opportunities of the ICR - Presentation Space will be used for delievering the lecture material, watching videos; IT Space for getting acquainted with game-cards "Guess Who?" and getting feedback from the teacher and groupmates; Mobile Learning Space - for developong the guideline for using game
Steam Decks; Conference Space for presenting results of creative work on the fragment of a lesson for primary school students

2.2.16. Lecture.
STEAM integration in the learning process by means of the game-cards "Guess Who?"

Lecture 4 familiarizes and the students with an interesting offline teaching/learning game-cards "Guess Who?" for enrolling children in scientific environment; promotes using the game-cards in primary school teaching/learning process additionally analyzing

geographical and cultural differences of the native land and the English-speaking countries (Great Britain and the USA).

Purpose - explain benefits and advantages of using game-cards "Guess Who?" at primary school lessons; train students in cteating game-cards for explaining and checking a particular topic or a fragment of the lesson and promoting geocultural scientific literacy in English-language communication.

<div align="center">Plan</div>

- Game-cards "Guess Who?" – advantages and benefits for using it in primary school as STEAM integration in the learning process
- Guidelines for creating an offline game-cards "Guess Who?" for primary school lessons ("I Explore the World" or "English")
- The main results of the lecture meet the above-stated goals

Theoretical information

Current primary school students of generation Alpha can be called digital aborigines. Unlike the previous generation, today's children have already grown up with a smartphone in one hand and a tablet in the other. Therefore, we teachers must find such methods and techniques to interest students in learning. Effiicient way of getting expected learning outcomes and motivate young learners to study is the use of innovative technologies in the classroom. On of them is *Gamification and Game-based learning.* However, these terms are not synonims. Gamification is considered to be the use of game elements as a system of motivation for the learning process, and game-based learning is learning that is completely based on the game, which has certain goals, objectives and results. There is still debate among scientists about the exact

definition of these two concepts, however, we totally believe they can contribute much to the inriching students with entertaining knowledge. The term "gamification" was introduced by the developer of computer games Nick Pelling in 2002.

According to Piaget (Piaget, 1962), the game allows children to transcend their immediate reality, it becomes more abstract, symbolic or social, which contributes to the passage of different stages of cognitive development. The child can "act as if", giving familiar objects certain roles, skills, thus developing abstract thinking.

The motivational function of game learning is the most frequently cited characteristic. Game-based learning motivates students for a long time to perform certain operations that have incentives, such as collecting stars, other trophies and fixed in the ranking tables, as well as a number of mechanical actions that delight students (ie, a high level of interest: Hidi & Renninger , 2006; Rotgans & Schmidt, 2011).

Trends in educational research indicate that interest in studying the impact of games on learning is growing. Therefore, we have made up our minds to introduce the idea of creating an education game "Guess Who?", namely develop game-cards for primary school children. The concept is these cards should enrol school children in scientific environment getting them acquainted with geographical and cultural differences of the native land and the English-speaking countries (Ukraine, Great Britain, the USA and perhaps, other English-speaking countries). The students' task is to create game-cards for explaining and checking a particular

topic or a fragment of the lesson and promoting geocultural scientific literacy in English-language communication.

Teaching/Learning based on such game-cards, especially when they are full of education content, is quickly picked up by junior students. There are often success stories in this information that supplies primary school learners with interesting scientific facts, raises deep serious questions about them, makes the learners interested in STEAM and learning in general, develops soft skills (in particular, the ability to learn and think as an innovator, critical thinking, creativity, collaboration and communication, etc.) and improves a set of competencies. The advantages of gamification in the educational process are obvious.

Numerous research shows that entertaining games can promote meaningful learning by providing players with adaptive challenges, curiosity, self-expression, entertaining discovery, immediate feedback, clear goals, player control, immersion, collaboration, competition, variable rewards and low failures. The teacher can use reflection and other methods to demonstrate and document students' observations.

Within the game learning experiences are engaging, learner-centered, and organized to support inquiry and creativity. Creating game-cards students search the most fascinating facts and data. On the one side of a card we provide learners with an interesting invention in the STEAM field, its old and modern pictures, brief information about the inventor, some evidences about the procedure of creating a product and more. Thus, from this content they have to guess the inventor (Guess WHO?). On the other side of the card school chindren will get acquainted with the inventor, in

particular, see the photo and the name, the country of origin, the years of birth; learn some vocabulary notes on the topic of the invention. Besides, this is up to the students' creativity to add a QR code with some short video of the invntion or the aurhor, interactive exercises and so on.

The popularity of games is not the enemy of education - but rather a new model of learning, a sort of transformation of the traditional education system. Of the five trends of education provided by Forbes magazine - distance education, personalization, gamification, interactive textbooks, learning through video games, - four belong to gamification. Introducing the game-cards "Guess Who?" in the primary classroom, students will definitely use those learning tools that allow them to see their own progress, to feel the situation of success, achieve the goals.

Another option we would like to draw attention to mostly concerns teaching language cycle of school subjects. As sometimes the capabilities of this or that platform do not take into account all the specifics of a particular subject or discipline in the form of online learning. For example, checking reading, storytelling or retelling a work - that is, those types of work in the classroom where speech is the key activity. Of course, the teacher can give such an opportunity at the online lesson, but checking each learner in real time will take a lot of effort and attention. It will make the lesson uninteresting and not solve the problem of knowledge control in this type of work.

To solve such problems, we offer one more interesting digital tool, such as Flipgrid. Thus, if you are looking for new ways of communication remotely with your audience, this service will be

helpful. Specialized learning platform Flipgrid allows students to share video files of their presentations, impressions, help involve students in learning within their usual environment - through gadgets.

Flipgrid is an easy-to-use video communication tool that enables students and teachers to record educational video appeals. In Flipgrid, you can work with any audience of different educational institutions, where students will feel "stars" not only as in Instagram or Tick Talk, but also in the classroom, because they will love to shoot a video that has educational content and meets specific educational goals.

Among the many pedagogical possibilities of using this digital tool, it is expedient to single out the following:

• Exchange of impressions / ideas on various topics.

• Review of a work of literature / art.

• Analysis of works of home reading for the summer (vacation) with coverage of the summary of the book and feedback on it.

• Homework, which involves memorizing a poem or a fragment of a work.

• Analysis or explanation of a theorem, problem, course of solving an equation in mathematics, etc.

• Congratulations on the holiday as part of a distance educational extracurricular event.

• Reading and translating a foreign language text or memorizing a piece of text, conversational topic or dialogue at a foreign language lesson.

• Holding parents meetings to find out what they think about certain organizational or learning issues.

• Video appeals of specialists for career guidance or educational purposes.

• Solving other tasks that involve speech and communication of participants in the learning process.

2.2.17. Seminar / practical / laboratory classes 8-9.

STEAM integration in the learning process by means of the game-cards "Guess Who?": guidelines for developing educational content.

Practical classes 8-9 are oriented at forming students' ability to use offline teaching/learning game-cards "Guess Who?" at primary school with the purpose of familiarizing junior students with geographical, scientific and cultural differences of scientific inventions in the native land and the English-speaking countries; train students in creating card games for primary school lessons; enrolling them in creative work by presenting the fragments of primary school lessons; promoting learning/teaching STEAM subjects.

Expected students' activities: expressing personal observations from using game-cards "Guess Who?", presenting the examle of its using at a primary school lesson, practicing to work with game-cards "Guess Who?" by promoting geocultural scientific literacy in English-language communication

Instructions for students: learn criteria for assessment of learning outcomes, cteate a piece of educational content for primary school, search for information on outstanding scientists and their

discoveries and achievements in the field of STEAM, use this information for creating cards, arrange a brief glossary on the theme .

2.2.18. Topics for individual and / or group tasks (if any).

Benefits of work with the game-cards "Guess Who?" for the primary school students

Outstanding scientists and their discoveries and achievements in the field of STEAM (UK and the USA): the opportunity to present facts in primary school using game-cards "Guess Who?". Development and presentation of a piece of educational content - game-cards "Guess Who?", as the integration of STEAM - topics in the primary school curriculum

(For criteria of the oral answer see Table 1, multimedia presentation see Tables 8).

2.2.19. Tasks for independent work.

Analyze the use of innovative teaching/learning tools at primary school: familiarizing yourself with the concept of the game-cards "Guess Who?"

Spesify pedagogical possibilities of using the game-cards "Guess Who?" in primary school (in which subjects you can use this game).

Develop a relevant list of topics that can be worked out for students with game-cards "Guess Who?"

Design a methodology step by step instruction for creating the educational content for primary school students using game-cards "Guess Who?"

(For criteria see Table 3).

2.2.20. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

2.2.21. Theme 3

Flipgrid – educational platform for video conferencing in a virtual environment practicing innovative teaching approaches and supportive digital tools.

2.2.22. Aims and expected learning outcomes.

Aims – to raise the problem of Women in STEAM for group discussion (based on the material of the previous lecture/theme); acquaint students with the Flipgrid platform and introduce its teaching opportunities for integrating STEAM subjects in primary school; promote their geocultural scientific literacy by practicing students' speaking skills through recorded videos on geocultural scientific knowledge, summarize the material of Module 2.

Expected learning outcomes – 1) apply Flipgrid– educational platform at primary school lessons ("I Explore the World") for virtual video communication and collaboration between teacher and students; 2) create a fragment of a lesson for primary school

students using video communication platform Flipgrid; 4) summing up information on Module 2.

2.2.23. Criteria and forms for evaluating learning outcomes on the theme (for oral presentation see Table 1).

Table 9. Criteria for Flipgrid Theme presentation:

Criteria	Scoring Criteria	Total points	Student's points
Organization of the oral answer	Logical sequence of presented information in the video messages	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Content of the answer	Introduction is attention-getting, good lay out of the topic, accuracy and relevance of information according to the chosen lesson in primary school, relevance of the applications used in the video messages	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Creativity of the Flipgrid Theme	Manner of the presentation, virtual contact with the primary school audience, good English language, visual aids (pictures, video, audio, etc), conclusions	Excellent - 5 Good - 4 Acceptable - 3 Unacceptable -2	
Score	Total points	15 (high level/excellent)	

Table 10. Criteria for Module test 2.

Criteria	Scoring Criteria	Total points
Excellent	Answer is complete; factually correct, sufficient detail provided; answer focuses only on issues related to the question;	5
Good	Answer is brief with insufficient detail. Unrelated issues were introduced with minor errors in content	4
Acceptable	Answer is incomplete. Excessive discussion of unrelated issues and/or significant errors in content	3
Unacceptable	Weak organization with no answer to the question; none of the relevant details were included	2
Score	Total points	5 (high level/excellent) – 10%

2.2.24. Digital tools.

Flipgrid educational platform for video communication

YouTube

2.2.25. Innovative Teaching / Learning Technologies.

inquiry based learning technology

interactive technologies

network and multimedia technologies

problem-oriented learning

peer assessment

Use of opportunities of the ICR - Presentation Space will be used for delievering the theoretical material, watching ppt; IT Space for getting acquainted with Flipgrid educational platform for video communication; Mobile Learning Space - for practicing video aqnnouncements and fragments of the lessons; Conference Space summarizing information on Module 2.

2.2.26. Lecture.

None

2.2.27. Seminar / practical / laboratory classes 10-11.

Flipgrid educational platform for video conferencing in a virtual environment

Practical classes 10-11 are oriented at forming students' ability to use online platform Flipgrid at primary school; train students in creating thematic videos with Flipgrid for primary school lessons "I Explore the World"; enrolling them in video communication online by presenting the fragments of primary school lessons; promoting online learning/teaching with Flipgrid at primary school; summarizing the material of Module 2.

Expected students' activities: expressing personal observations from using online platform Flipgrid, presenting the fragments of themes at the lesson "I Explore the World" at primary school, practicing to work with Flipgrid, designing thematic videos for primary school students

Instructions for students: learn criteria for assessment of learning outcomes; sign up at Flipgrid platform and share own creation with groupmates and a teacher; cteate a piece of educational content for primary school with Flipgrid, arrange a brief glossary for the theme, prepare for Module test 2.

2.2.28. Topics for individual and / or group tasks (if any).

Analysis of advantages and disadvantages of the Flipgrid Platform and its pedagogical opportunities for integrating STEAM subjects in primary school.
Creation educational content for primary school with Flipgrid as a fragment of a lesson for the subjects "I Explore the World" or /and "English".

(For criteria of the oral answer see Table 1, presentation see Table 9).

2.2.29. Tasks for independent work.

Explore additional information on famous Ukrainian and English or American scientists and their scientific acievements or inventions.
Find geocultural information about Ukraine, Great Britain and America (the USA) which can be integrated in the subjects "I Explore the World" or /and "English" with the help of video communication on Flipgrid platform.
Explain which STEAM topics can be handled effectively with students using the Flipgrid platform.

Revise the content of Module 2 for writing modular test work (for criteria see Table 10)

(For criteria see Table 3).

2.2.30. Methodological materials and instructions (if any).

The abstract of the lecture, methodical instructions for preparation for the practical classes, methodical instructions for performing independent work, terminology dictionary on the topic are available at the link - http://194.44.152.156/course/view.php?id=6

3. TASKS FOR SUMMATIVE ASSESSMENT

3.1.1. List of tasks for summative assessment:

Module 1

Creation of the Model of GCSL with Concept Map – 15 points

Writing a paper work on the suggested topic – 20 points

Development and presentation of the example of the use of one innovative pedagogical technologies at a primary school lesson ("English", "I Explore the World") – 15 points (15+20+15=50=10%)

Module test 1 – - 10%

Module 2

Creation of one's own Kahoot as the fragments of lessons for primary school students – 15 points

Creation of 5 game-cards "Guess Who?" as the fragment of a theme at the lesson ("I Explore the World", "English") for primary school students – 15 points

Creation a fragment of the lesson "I Explore the World" for primary school students using Flipgrid Video-conferencing platform – 15 points (15+15+20=50=10%)

Module test 2 - - 10%

Students' independent work - 20%

Exam - 40%

The evaluation system consists in the following activities, indicating the weight of each one for the final mark:

Module test 1 (10%) and Module test 2 (10%) for evaluating GC 2, CS 1.

Creative work preparation and presentation on Module 1 (10%) and Module 2 (10%) for evaluating GC 3, SC 2, SC 3.

Independent work preparation (20%) for evaluating GC 3, CS 3.

Evaluation of the GC1 is realised through working at all of the specific competences.

A final exam in which all generic competences are evaluated through specific competences (40%).

SA 1. Module 1 (Creative work: a model of geocultural scientific literacy with Concept Map, a written work on a suggested topic, presentation of the developed fragment of any lesson for primary school students based on the chosen innovative pedagogical technology) - 10%

SA 2. Test on Module 1 - 10%

SA 3. Module 2 (creation of Kahoot as the fragments of lessons for primary school students, create 3 game-cards "Guess Who?" as the fragment of a theme at the lesson ("I Explore the World", "English") for primary school students, create a fragment of the lesson "I Explore the World" for primary school students using Flipgrid Video-conferencing platform) - 10%

SA 4.Test on Module 2 - 10%

SA3. Students' independent work - 20%

SA4. Exam - 40%

Total – 100 %

3.2. Test tasks (if available).

3.3. Additional creative tasks (if any).

3.4. The order of carrying out formative assessment (list of questions for formative assessment):

1. Definition and conceptualization of the concept of geocultural scientific literacy

2. 10 key competences of the New Ukrainian School and understanding of reflection of geocultural scholarly literacy in its conception.

3. Effectiveness of the use of innovative pedagogical teaching technologies in primary school.

4. Peculiarities of using innovative pedagogical technologies of "flipped learning", technology "peer assessment", problem-oriented learning, project technology, technology of building a mind map (card intelligence), interactive technology, network and multimedia technologies.

5. Analyze any technology as an example of a lesson fragment for primary school students (different from what was presented ar the practical class).

6. The use of innovative learning tools at primary school: purpose, efficiency, challenges.

7. Online service Kahoot - a tool for partner interaction and formative assessment of knowledge of students.

9. Practical skills to use the Kahoot tool in primary school school (create Kahoot, different from what was presented ar the practical class.

10. Methodology for creating educational content for primary school students using the Kahoot tool.

11. Possibilities of using the game-cards "Guess Who?" in primary school.

12. Methodology for creating educational content for primary school students using game-cards "Guess Who?"

13. Flipgrid Video-conferencing platform and introduce its teaching opportunities for studying STEAM subjects in primary school.

14. Methodology for creating educational content for primary school students using Flipgrid Video-conferencing platform

15. Describe (demonstrating practical examples) the use of Flipgrid Video-conferencing platform at the lesson of "I explore the world" or "English.

16. The problem of Girls in STEAM – Flipgrid Video-conferencing platform as the means of promoting STEAM learning at primary school.

17. Famous Ukrainian and English or American scientists and their scientific acievements or inventions.

18. Geocultural information about Ukraine, Great Britain and America (the USA) which can be integrated in the subjects "I Explore the World" or /and "English" with the help of video communication on Flipgrid platform.

4. LIST OF RECOMMENDED LITERATURE
(INCLUDING ELECTRONIC RESOURCES)

Basic:

1. Близнюк Т.О. Geocultural scientific literacy: concept and methodological recommendations. Навчально-методичний посібник з Геокультурної наукової грамотності. Івано-Франківськ, Видавець Кушнір Г.М., 2019. 45 с.

2. Близнюк Т., Слюсарчук Т. Формування цифрової компетентності молодших школярів (на матеріалах уроків англійської мови). Навчально-методичний посібник.– Івано-Франківськ, Видавець Кушнір Г.М., 2019. – 90 с.

3. Закон України «Про вищу освіту» від 1 липня 2014 року № 1556-VII. [Електронний ресурс]. Режим доступу: http://zakon3.rada.gov.ua/laws/show/1556-18

4. Закон України «Про освіту» (Відомості Верховної Ради (ВВР), 2017, № 38-39, ст.380). – [Електронний ресурс]. – Режим доступу: http://zakon5.rada.gov.ua/laws/show/2145-19

5. Закон України «Про загальну середню освіту». – [Електронний ресурс]. – Режим доступу: http://mon.gov.ua/activity/education/zagalna-serednya/normativno-pravova-baza1.html

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8. Нова українська школа. Концептуальні засади реформування середньої школи. [Електронний ресурс]. Режим доступу: http://mon.gov.ua/%D0%9D%D0%BE%D0%B2%D0%B8%D0%BD%D0%B8%202016/12/05/konczepcziya.pdf

9. Нова українська школа: порадник для вчителя / за заг. ред. Бібік Н. М. К.: ТОВ «Видавничий дім «Плеяди», 2017. 206 с.

10. Стратегія розвитку інформаційного суспільства в Україні (від 15 травня 2013 р. № 386-р.). [Електронний ресурс]. Режим доступу: http://zakon5.rada.gov.ua/laws/show/386-2013-%D1%80

11. Цифрова адженда України – 2020. Концептуальні засади (проект). [Електронний ресурс]. Режим доступу: https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf

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18.   Hirsch, E. D. Jr. (2001). Cultural Literacy. Available at: www.projectcitizen405.com/Background/culliter.pdf (in English)

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Additional:

1. Дичківська І. М. Інноваційні педагогічні технології : посібник / І. М. Дичківська. – 2-ге вид., допов. – Київ : Академвидав, 2012. – 352 с.

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3. Лист МОН від 27.06.2019 № 1/9-414 "Деякі питання щодо створення у 2019/2020 н.р. безпечного освітнього середовища, формування в дітей та учнівської молоді ціннісних життєвих навичок".

4. Лист ІМЗО від 22.08.2019 № 22.1/10-2876 "Методичні рекомендації щодо розвитку STEM-освіти у закладах загальної середньої та позашкільної освіти у 2019/2020 навчальному році"

5. Морзе Н., Василенко С., Гладун М. Шляхи підвищення мотивації викладачів університетів до розвитку їх цифрової компетентності. Open educational e-environment of modern University, № 5 (2018). Режим доступу:http://openedu.kubg.edu.ua/journal/index.php/openedu/article/view/164#.XIEXqSgzbIV

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7. Олійник В. Інтерактивні технології у початковій школі / Валентина Олійник, Олена Сергієнко // Сучасна школа України. – 2013. – № 3(255). – С. 9–42.

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5. APPENDICES (IF NECESSARY)

5.1 Glossary

1.   Accelerator-company or plan that helps new companies or organizations to grow quickly and become successful

2.   Access to - the means or opportunity to approach or enter a place; obtain or retrieve (computer data or a file)

3.   Acquisition – the process of getting something

4.   Alumni - men and women who have completed their studies, esp. at a college or university

5.   Application – 1) an official request for something, usually in writing; 2) a computer program that is designed for a particular purpose; 3) a way in which something can be used for a particular purpose

6.   Aquire - o get or buy something

7.   Attachment – 1) an extra piece of equipment that can be added to a machine; 2) computer file that is sent together with an email message

8.   Assist in – help with something

9.   Availability - the quality of being able to be used or obtained; he state of being otherwise unoccupied; freedom to do something

10.   BYOD – bring your own device

11.   Capability - the power or ability to do something; the extent of someone's or something's ability; a facility on a computer for performing a specified task

12.   Capacity the maximum amount that something can contain or produce

13.   Collaborate – to work with someone else for a special purpose

14. Community – the people living in one particular area or people who are considered as a unit because of their common interests, social group, or nationality

15. Competence – the ability to do something well

16. Competency – an important skill that is needed to do a job

17. Comprehension – he ability to understand completely and be familiar with a situation, facts, etc.

18. Concern – 1) to cause worry to someone; 2) to be important to someone or to involve someone directly

19. Core competences – a skill that is necessary to be able to do a particular activity or job

20. Creative - producing or using original and unusual ideas

21. Criterion (Criteria) – a standard by which you judge, decide about, or deal with something

22. Critical thinking – the process of thinking carefully about a subject or idea, without allowing feelings or opinions to affect you

23. Cross-cultural - involving two or more different countries or cultures

24. Culture - the way of life, especially the general customs and beliefs, of a particular group of people at a particular time

25. Databases - a structured set of data held in a computer, especially one that is accessible in various ways; organized collection of data, generally stored and accessed electronically

26. Digital - using or relating to digital signals and computer technology

27. Digital age – the present time, when most information is in a digital form, especially when compared to the time when computers were not used

28. Digital native – a person who is very familiar with digital technology, computers, etc. because they havegrown up with them

29. Electronic resources are materials in digital format accessible electronically. Examples of e-resources are electronic journals (e-journal), electronic books (e-book) online databases in varied digital formats, Adobe Acrobat documents (. pdf), WebPages, etc

30. Environment – the conditions that you live or work in and the way that they influence how you feel or how effectively you can work

31. Handbook – a book that contains information and advice about a particular subject

32. Handle complex information – cope with difficult or complicated material

33. ICT – information communication technologies

34. Inquiry – the process of asking a question

35. Gateway - a device used to connect two different networks, especially a connection to the Internet; a changing learning environment

36. Learning outcomes – a result or effect of an action

37. Literacy – 1) the ability to read and write; 2) knowledge of a particular subject, or a particular type of knowledge

38. Media – the internet, newspapers, magazines, television, etc., considered as a group

39. Millennials – relating to a millennium or to the year 2000

40. Motivation - enthusiasm, need or reason for doing something

41. Multicultural – 1) including people who have many different customs and beliefs; 2) relating to a number of different

cultures, esp. to the traditions of people of different religions and races

42. Multi–faceted phenomenon - something with many features or perspectives to consider

43. Multisided   - having a lot of different features or characteristics

44. Network - collection of computers, servers, mainframes, network devices, peripherals, or other devices connected to one another to allow the sharing of data

45. Online survey – an online research method used for collecting data from a predefined group of respondents to gain information and insights into various topics of interest

46. Overburden - to make someone or something work too hard or carry, contain, or deal with too much

47. Plagiarism – **is** the representation of another author's language, thoughts, ideas, or expressions as one's own original work

48. Relevance – the degree to which something is related or useful to what is happening or being talked about

49. Scientific - relating to science, or using the organized methods of science

50. Skills – an ability to do an activity or job well, especially because you have practised it

51. Societal values – values, relating to or involving society

52. Soft skills - people's abilities to communicate with each other and work well together

53. Sophisticated – 1) having a good understanding of the way people behave and/or a good knowledge of culture and fashion; 2)

intelligent or made in a complicated way and therefore able to do complicated tasks.

54. Space – the area around everything that exists, continuing in all directions

55. Special - relatingto the position, area, and size of things

56. Tool - something that helps you to do a particular activity

57. Versatility – the quality of being versatile, able to change easily or to be used for different purposesHi girls!

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GEOCULTURAL SCIENTIFIC LITERACY
Textbook

ГЕОКУЛЬТУРНА НАУКОВА ГРАМОТНІСТЬ

Підручник