

Blended Learning Method for Improving Students' Media Literacy Level

Yuliya Krylova-Grek^{1[0000-0002-2377-3781]} and Mariya Shyshkina^{2[0000-0001-5569-2700]}

¹ National University of "Kyiv-Mohyla Academy", 2 Skovorody St., Kyiv, Ukraine

² Institute of Information Technologies and Learning Tools of NAES of Ukraine,
9 M. Berlynskoho St., Kyiv, Ukraine
docal23@ukr.net, shyshkina@iitlt.gov.ua

Abstract. The paper discusses the issues of improving students' media literacy skills to help them to navigate through an increasingly complex information society. It reports on a project aimed at applying the blended learning model to boost high school students' media literacy levels. The given model is recognized to have a number of advantages for both teachers (tutors) and learners (students). It is generally accepted that the blended learning method provides students with profound theoretical knowledge and retains the emphasis on practice. Besides, online classes offer a great opportunity to reach a wider audience. The purpose of the paper is to describe the authors' experience in introducing a new method for improving the learners' media literacy skills based on the blended learning model. The survey responses demonstrated that the accessibility, ease-of-use, and duration of the classes were deemed effective in terms of students' engagement and increases in their media literacy level. The course helped learners to develop their critical thinking and other media-related skills, to identify propaganda, manipulation, and fake messages found in media streams.

Keywords: Media literacy, Blended learning, Verification, Critical thinking.

1 Introduction

1.1 Research Objectives

The contemporary information-learning environment is characterized by the dominance of new models of learning activity management systems, innovative technologies and solutions, including online resources, diverse cloud services, and other online tools and applications.

Within an education industry framework, the innovative approaches to learning activity management system and information processing are in high demand. Indeed, the given approaches supplement formal teaching methods with greater access to information-learning networks and systems. Besides, they provide information safety and cyber security, as well as encourage the formation of the ICT-competent learner who will efficiently use the power of information resources and tools. In this regard, the

problem of new media literacy formation as the component of a learner's ICT competence comes to the fore.

Moreover, it is important to stress, that modern media and technologies cause numerous challenges concerning different aspects of a person – information society interaction. In the age of information overload, mass media, in particular, social networks reach an extremely massive audience and distribute different types of information. It means individuals have to learn how to orient in the media information field and channels of delivering information to the public, otherwise, they may mistakenly believe fake or manipulative news. Hence, the task of a teacher is to educate his students as autonomous thinkers, able to analyze and critically evaluate the information, to seek the truth, or at least to realize at which direction to move [10].

Today's media provide brand-new and potentially powerful platforms to convey diverse information that fundamentally shape users' lives. Therefore, it is crucial to be able to fact-check and verify the accuracy and truthfulness of the information, to find credible sources of information.

The aim of the paper is to justify the prospects of the blended learning model-based media literacy course to enhance learners' competency level and to specify the perspectives of its introduction into the university curriculum.

1.2 Problem Statement

The analysis of the domestic and international experience of the use of ICT and media tools in the learning process at different educational levels testifies that such class of ICT-based learning tools as media networks constantly attracts the attention of researchers [3], [6], [7], [13]. The tools that are multilingual and diversified and at the same time easy in use, become irreplaceable in maintenance of various processes of learning and research. Online tools constitute the environment for project work and collaborative learning forming innovative pedagogical technologies.

In recent years, there has been an explosion of media literacy educational practices and issues regarding lifelong media literacy development and the teachers' preparedness to introduce media literacy classes into secondary and high school curriculum, to implement media educational innovations, to accept the experience of foreign educators and practitioners, to research media literacy as a component of security competencies, etc. [21]. In this respect, the development of new forms, models and teaching methods that could be disseminated and applied at below secondary, secondary, upper secondary and even tertiary education is undergoing a considerable interest.

In particular, it should be noted that Ukrainian society manifests quite a stable demand for initiating media education programs at schools and higher education institutions and insists on all citizens becoming media literate focusing attention on media literacy in the context of lifelong learning. Furthermore, the introduction of international practices to formulate educational content and create training courses to develop critical thinking skills is still highly relevant.

There is an urgent need to create separate media literacy courses for secondary and high school teachers, students, schoolchildren, to integrate media literacy topics into

existing curricula of secondary schools and departments of higher, higher pedagogical and postgraduate education.

The media literacy courses should be differentiated, depending on the content and purpose of the training and the practical teaching experience. We consider that the best effect can be achieved by introducing separate courses; however, integrated or optional courses, as well as various trainings can also help to achieve the desired result.

What is the purpose of media literacy? Generally speaking, media literacy is defined as the ability to access, analyze, evaluate and communicate messages in a wide variety of forms. More specifically, media literacy is not just about getting some knowledge. The key goal of the teacher is to educate students to evaluate the information provided by media critically, to form a motivational interest in critical attitude, and to teach to create their own media products.

Therefore, there is a necessity to develop media literacy courses for students that should be based on advanced innovations and achievements in this field. Besides, these courses should take into consideration the progressive flexible forms and methods of learning aimed at making the learning process ultimate open, adaptive, focused on the learner's needs, and at the same time easy-to-disseminate in diverse social contexts.

1.3 Research Methods

The study is based on the methods of theoretical analysis, generalization and systematization of scientific facts about the pedagogical processes and phenomena, methods of system analysis and modeling, pedagogical observations and generalization of pedagogical experience, as well as the results of the pedagogical experiment. The study was carried out in the framework of the implementation of the planned research undertaken in the Institute of Information Technologies and Learning Tools of NAES of Ukraine and State University of Telecommunications.

Such interdisciplinary methods and procedures are used in media education studies as analysis and synthesis, induction and deduction, visualization and formalization, expert evaluation, identification and others. It is necessary to acquire them in complex; otherwise, there is not a sufficient level of mastering the material of media education.

2 Research Results

2.1 Previous Studies

The problems of interconnection of social media-based and citizen-led discussions and deliberations supported by e-Participation initiatives, some socio-technical challenges associated with the phenomenon of “duality of e-Participation” have been considered in [14].

The notion of open data has the great impact on the processes of collaboration between citizens and public. The current challenges of the design of an open data collaboration platform, aimed on enhancing transparency, accessing, understanding, and using open data have been analysed in [4]. Usability evaluation of an open data platform in the context of some socio-technical challenges is considered in [11]

The important issue of the studies of social media application is fact-checking and combating fake news and also the search for a methodology for performance analysis of fact-checking organizations [12].

These issues were highlighted in particular within the COMPACT project that was developed in 2017-2020 under the framework Horizon 2020 (<http://compact-media.eu/objectives-social-media-and-convergence/>). The project was devoted to the problems of social media regulation so as to adjust EU regulatory policies. It was aimed at the increasing awareness of the latest technological innovations in the context of social media and content convergence.

In the conditions of rapid development of the e-learning technologies and technological platforms that incorporate the new media it is very important to prepare highly skilled specialists, capable to undertake productive work in information society. Therefore it is necessary to search for new methodological approaches to organization of learning that would assist the deep mastering and understanding of basic concepts, rules, principles and methods of disciplines studies, their relationship to contiguous disciplines, and ways of their use in practice.

The perspective direction is the integration of blended learning courses into the media education learning process.

The most prevalent definition of blended learning currently used in the literature was given by Curtis Bonk and Charles Graham in Handbook of Blended Learning. According to the authors, "blended learning systems combine face-to-face instruction with computer-mediated instruction" [2].

In recent years there has been growing interest in blended learning. Much work on the potential of the method has been carried out by E. Zhelnova, O. Krivonos, V. Kukhareenko, M. Nikitina, A. Stryuk, Y. Trius, G. Cherednichenko, L. Shapran, C. Graham, S. Moebs, S. Weibelzahl, D. Painter, K. Schenk, D. Andrade [19]. Learning analytics within a blended university course based on a socio-constructivist approach was represented by N. Sansone, D. Cesareni [1, 8, 16].

Blended learning on the Moodle has become popular in the system of university education and it is used in Ukraine and Europe. This platform allows using group-work both face-to-face in the classroom as well as online an experience of collaborative knowledge building [9, 15, 17].

Today both Ukrainian and foreign scholars participate in an ongoing discussion about the definition of the concept of blended learning. Conventionally, it is explicated as a combination of traditional formal learning tools (working in the classroom, studying theoretical material) with informal (for instance, discussing debatable issues via email and Internet conferences)(D. Painter). Blended learning refers to a mix of e-learning and classroom training (R. Shank). Moreover, it is interpreted as a combination of distance and traditional communication in integrated learning (S. Moebs & S. Weibelzahl) or as an approach that integrates traditional and computer-mediated learning in a learning environment (S. Graham).

In their groundbreaking paper, G. Siemens et al. demonstrated that blended learning methods are more effective than traditional f2f learning or online teaching without teacher (mentor) guidance [18]

We also take into consideration how some constructivist principles – such as knowledge building, active and self-directed learners, collaborative learning, communities of learners and practice – can be applied to compose the architecture of a blended university course. Principles of constructivism were always followed when setting activities and meetings. The description provided is mainly useful for teachers and educators interested in implementing a blended course with clear references to constructivist pedagogy [8].

Sansone, N., & Cesareni, D. [16] consider the learning analytics within a blended university course based on a socio-constructivist approach. The authors focus on the evaluation system adopted in the course, deliberately inspired by the principles of formative assessment: an ongoing evaluation in the form of feedback shared with the students, and which integrates the teacher's evaluation with self-evaluation and peer-evaluation.

Hence the development of a new area of research in the field of educational sciences, the Learning Analytics (LA) that Siemens [18] defines as the use of data produced by the student and the analysis models to discover information and social connections, and to predict and give advice on learning.

The correct interpretation and placement of the quantitative data, as well as a suitable integration of qualitative and quantitative data, is what is required on the one hand by the teachers, on the other by the learning software and the LA techniques, which must necessarily be developed in close connection with the pedagogical assumptions.[16].

Modern information technologies are gradually becoming an integral part of the education system. The necessity of implementation of digital competency considered at the research of O. Kuzminska, M. Mazorchuk, N. Morze [7]. According to the scientists, nowadays teachers and students in Ukraine have enough skills for organizing e-learning. However, despite they have some differences in their skills, this fact should be taken into consideration while developing a methodology of co-education.

Introducing a blended learning course to personal growth and life skills training is no less important than improving one's professional skills. The ability to navigate in today's overwhelming information flow, analyze and detect fake propaganda and other manipulative messages is a crucial part of the cybersecurity of both the individual and society since the human factor still remains the weakest link in any sophisticated production technique [21]. Therefore, media literacy is a vital aspect of cybersecurity, while the culture of information consumption is a key factor in society's cybersecurity.

We believe that the combination of traditional place-based classroom methods and online learning technologies is a contemporary and convenient method to integrate additional professional and personal development-related courses into the standard education system, in particular for media literacy and cybersecurity learning courses.

We consider this field to be promising to create blended learning courses since it has the potential social impact and will contribute to the rapid expansion of innovations, encompassing as much material as possible, reaching a broader audience and more effective penetration of new technologies into everyday life and education process.

2.2 The Characteristics of the Media Literacy Course Based on the Model of Blended Learning

An obvious advantage of a media literacy course based on a blended learning model is an opportunity to combine online learning with traditional f2f (face-to-face) instruction modes, which provides benefits to both the learner and the course tutor. These courses are partially asynchronous, so the student can schedule online classes on his own. During the in-class sessions, he gets feedback from the teacher, who, for example, can explain difficult concepts or clarify certain issues. In addition, mentoring and classroom planning makes students more disciplined. In turn, the teacher can control the educational process and give feedback. Furthermore, the theoretical material can be available online for participants to enlarge the number of practical classes.

Consequently, we may put forward the *Hypothesis* of the study: The blended learning method will provide students with profound theoretical knowledge in media literacy and retains the emphasis on practical skills. In addition, the accessibility of online classes will offer a great opportunity to reach a wider audience.

The *Purpose* of this introduction will be the next: to improve media literacy level of the students through the use of a blended learning model.

The proposed course will allow students to improve their media literacy level by developing their critical thinking skills and ability to identify cyber propaganda, manipulation, and fake messages found in media streams.

The practical experience of previous media literacy courses conducted by the authors in 2017-2018 [5], [6] and applied place-based classroom methods have shown that teachers need more time to cover the topics fully. Each topic took three to five 90-minutes sessions. We should affirm that time constraints negatively affected the completion of the course with practical material and halved the time required to complete the practical tasks, which included working with information resources. In 2017-2018 the author has conducted the following courses: Psycholinguistic Basics of Media Literacy (five sessions), Online Tools for Photo Verification (five sessions), and Humanitarian Aspects of Cyber security (three sessions).

The Psycholinguistic Basics of Media Literacy training consisted of five sessions. They were targeted at teaching students to analyze text and understand what linguistic manipulation mechanisms were used to influence the audience, why manipulative and fake news tended to spread quickly. Besides, students learnt to create and analyze information contexts.

The Online Tools for Photo Verification training included five sessions where students learnt to verify online photos and pictures by means of free online tools, such as “Tineye”, “Fotoforensics” and so on.

The Humanitarian Aspects of Cyber security incorporated three sessions devoted to vishing, phishing and other social engineer tactics. Moreover, it included psycholinguistic methods for analysing fishing letters.

Analyzing the sessions, we found that their duration (thirteen sessions) was the main disadvantage of the course. The number of sessions was incredibly inconvenient for students and caused attendance and group composition problems. Obviously, the given problem cannot be solved by a simple combination of course topics and time reductions

since it will have a negative impact on practical exercises or analysis of important theoretical material.

Therefore, we considered the blended learning method as an effective tool to combine distance learning with in-class sessions. Such a combination made it possible to expand the theoretical material and to add practical tasks for forming (developing) the skills of analysis, evaluation, verification, and differentiation of information. 12 hours (63% of the course time) and 7 hours (37% of the time) were taken by online and in-class sessions, respectively. It will help you evaluate the information flows in your daily life and equip you with skills you can use to recognize disinformation and propaganda (Fig.1).

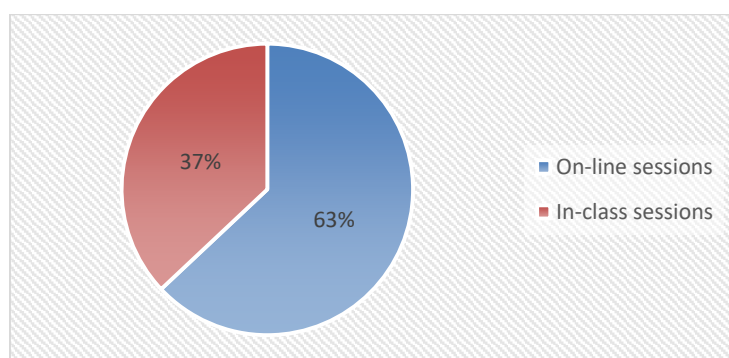


Fig. 1. Distribution of media literacy course time

It is worth noting that this learning method was identified as one of the priorities when applying for the group. When registering for the course, the students filled out a questionnaire, which asked to choose the reasons why they wanted to attend the course. One of the options included "blended learning". 99% of the respondents ticked this item.

Thus, grounded on the data obtained, we can conclude that blended learning is apparently one of the factors to attract students and is an ultra-modern form of learning based on information technologies.

The blended learning method made possible to reduce the number of in-class sessions at the same time providing more theoretical material and paying closer attention to the development of practical skills.

The course included both theoretical and practical classes. Most of the theoretical materials were incorporated into the online classes, while the majority of practical work was done during the in-class sessions. 90-minute classes were held once a week. The course consisted of five in-class (7 hours) and online (12 hours) sessions. The number of training hours was stated in the learners' certificates, issued after passing the final online and in-class tests. Thus, trainees received 7-hour and 12-hour certificates which indicated the course type.

The blended learning course was piloted at the State University of Telecommunications (Kyiv, Ukraine). The training materials were created with the support of IREX, the US educational agency. The online part of the VeryVerified Media Literacy course was hosted on EdEra educational platform. It is a part of the Learn to Discern, the media

and information literacy project, implemented by IREX with the support of the US and UK embassies in Ukraine in partnership with the Ministry of Education and Science of Ukraine [20].

The course was aimed at developing analytical and critical thinking skills, at evaluating the content of modern media. The classes also covered the techniques of influence on the reader's consciousness, which are widely used online.

Each training included five 90-minute sessions. The course was attended by 138 students divided into four groups of 28-30 learners.

Prior to the course, we conducted a survey to determine the rate of students' media literacy.

The questionnaire consisted of three parts targeted at examining a specific aspect of differentiating and analyzing information. When calculating, the statistical error did not exceed $\pm 2.17\%$.

Part One: Reading and Analyzing the Article. This part contained questions to identify the information recognition skills (to single out signs of manipulative content, imposing thoughts and ideas).

The results showed that 66% of respondents could partially recognize truthful information. The greatest difficulty was the question if the judgments in the article were supported by the facts. The percentage of correct answers to all questions was 32%.

Part Two: Discovering Knowledge about Ukrainian Media Sphere. The results demonstrated that 38% of learners did not have sufficient information about the Ukrainian TV-channels owners. The biggest challenge was connected with the owners of INTER, STB, and "Ukraina" TV-channels (20%).

When making clear certain concepts of the Ukrainian media, students found it difficult to explain what filter bubble and hate speech meant (only 10% and 46% of correct answers, respectively).

Part Three: Identifying Information Reviewing and Discerning Skills. Students were asked to answer a set of questions:

A) How to check if a journalist follows professional ethics and standards? Answering the given question, 83% of respondents made mistakes or did not give a complete answer, 10% did not answer the question at all, and only 7% could choose the correct answer from the list.

B) How to check the credibility of experts' comments? Results showed that 78% of learners made a mistake or did not give a complete answer to the question, 14% could not give any correct answer, and only 8% gave correct answers.

C) Then the students were asked to differentiate judgments, thoughts and facts. Students differentiate thoughts and facts with a source and facts without a source. 75% of students made mistakes in determining judgments and facts with a source and facts without a source, 21.5% were able to distinguish between these concepts, 3.5% could not perform the tasks correctly.

As for telling apart hate speech and fake language, 82% of respondents could not recognize hate speech in media texts, 57% were unable to detect fake messages.

The results of the survey showed that students had partial recognition skills, while the main problem was the low level of analysis and recognition skills. Quantitative data

processing demonstrated that the average level of media literacy before implementing the course was 21.3%.

The blended learning method also included topics that expanded the range of ways of discerning online information, for instance, to use logic, psychology, and linguistics (the psycholinguistic component) to analyze texts, and to learn about the humanitarian aspects of cyber security (phishing). Furthermore, the blended learning method increased the time for performing practical tasks to consolidate the newly acquired skills of information verification and differentiation.

The course included basic and additional topics. The main topics were recommended by IREX. Extra topics were provided by the tutor-facilitator to improve students' media and information literacy skills. The additional topics are given after the "+" sign in the list below.

Unit 1 – Media landscape+ psycholinguistic peculiarities of manipulative texts 1.

Unit 2 – Traditional media+psycholinguistic peculiarities of manipulative texts 2.

Unit 3 – Social media+ humanitarian aspects of cybersecurity.

Unit 4 – Misinformation and manipulation+ online tools for photo verification.

Unit 5 – Summary. Project. Students prepare one out of six media literacy-related topics.

Since repetition is a crucial ingredient of student learning, between in-class sessions students repeated and learned new material in the online course.

The online course included videos and online tests on all major topics. The tutor-facilitator checked the material by providing practical tasks and test questions that implied analyzing and verifying information. After discussing and reviewing the material, the students got extra knowledge concerning ways of analyzing and verifying information, which was consolidated by practical exercises (according to additional topics. See topics after the "+" sign).

During the first session, the students learned about six types of content. Besides they got to know what influences the user when perceiving the information, scrutinized the most effective and potential type of contemporary media, and practiced to distinguish actual facts from judgments. Additionally, the students gained an understanding of the psycholinguistic basics of media text analysis and what tools usually used to attract as wide audience as possible.

The second session was aimed at discussing what and who influences the content of traditional media, journalism standards and how journalism standards co-exist with freedom of speech. Moreover, the trainees continued to work on drilling the skills of psycholinguistic text analysis.

The third session focused on social networks, mechanisms of influence on the audience and algorithms that affect the person's account in social networks. Besides, it reported how social engineers could examine one's social network account and exploit the presented information to manipulate and obtain the required data.

During the fourth session, the students learnt how to recognize false information and misinformation, manipulative techniques in the media, to single out hate speech and contract articles (so-called dzhyntsa). What's more, students became competent indistinguishable fake photos with the help of special online tools.

In the fifth session, the students worked on the project and presented their ideas about media literacy.

In the fifth session, students were interviewed to determine their media literacy levels after completing the course.

The results obtained showed that the students significantly improved their theoretical knowledge and practical skills of information analysis and recognition (Fig. 2). Before the course, most students were unfamiliar with certain concepts and fact-checking techniques (the average media literacy level was equal to 21.3%). After the course based on the blended learning model, students' average media literacy level reached 52.4%.

Most listeners were able to analyze the article, its accuracy and truthfulness, to identify signs of hate speech, manipulations and violations of journalistic standards, to separate facts from judgments, to spot phishing, to check photos, and to find out what or who influenced the content of Ukrainian media.

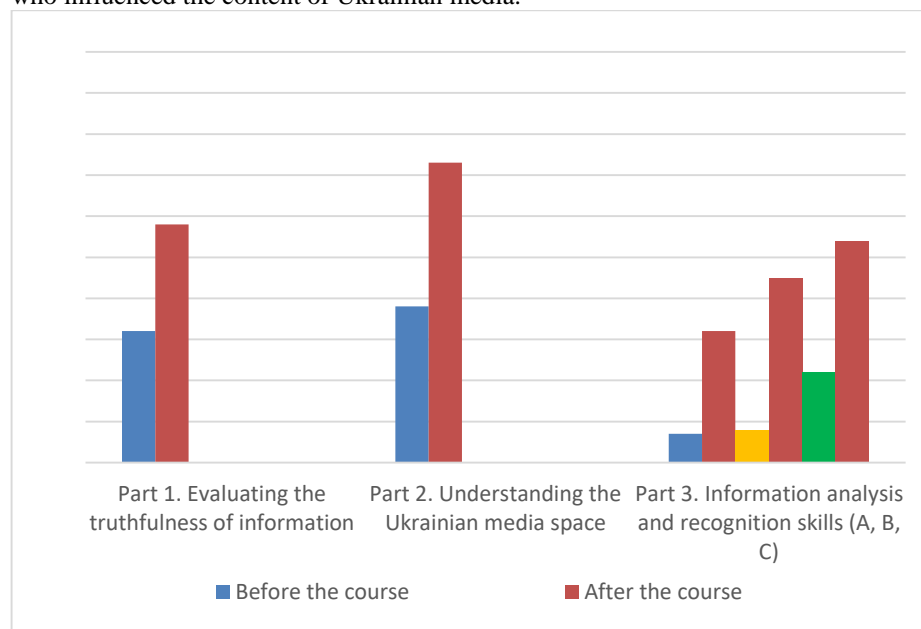


Fig. 2. Comparison of media literacy levels before and after the course

2.3 The Prospects of the Method of Media Literacy Blended Learning Use and Dissemination

The present-day approaches to the development of educational and scientific environment involve the formation of fundamentally new forms of its organization. To meet the demands of contemporary information society it is necessary to modify its composition and structure, the functions of the learning system aimed at intensifying the educational and cognitive activities of its participants.

The purpose of creating an educational and scientific environment of the university lies in satisfying the educational needs of the participants of the educational process.

The above-mentioned needs include gaining access to quality education and more flexible adaptation to the learners' individual features, which can be obtained by providing access to top-ranked educational e-resources and services.

We feel strongly that this problem can be solved by introducing a brand new learning method for developing learners' media literacy. The proposed method is based on the blended learning method and implies the introduction of a number of educational modules that can be used to train scholars, teachers, and students.

The method is aimed at improving the media literacy level of the participants of the educational process, creating the most favorable conditions for personal development, and achieving learning goals. The wide access to new-generation electronic educational resources, information, and analytical tools, improvement of the level of training organization and scientific and pedagogical research, enhancement of teachers and students' ICT competencies will facilitate the process.

In referring to the learning method, we mean "the normative model of the educational process (training) within an educational unit, which indicates the ordering (in terms of time and space, in accordance with the education and upbringing goals and taking into account the selected pedagogical technology) of the student's activities (those, who enrolled in a school or other educational institution) regarding the learning content and the elements of the learning environment of a particular educational unit" [21, p. 310]. Hence, the content of a learning method always alludes to a certain educational unit, comprising educational topics, subjects, and modules.

Since this course is an interactive one aimed at unlimited participation and open access via the web, it allows involving students directly in the learning process. At the same time, the course differs from the classical teaching and traditional classroom-lesson system. The course activities include group work, work in pairs, creative and search-heuristic tasks, content analysis, use of up-to-date technologies for critical analysis of media content, etc.

This training greatly expanded the scope of the classic media literacy course. First, it incorporates advanced modern technologies. Second, students can create digital content both collaborative and personal, which allows them to detect manipulative and fake content.

Moreover, while learning the psycholinguistic basics of text analysis, students take on a variety of roles (consumer, creator, and analyst), acquiring additional knowledge about information recognition.

Thus, learning technical and psycholinguistic aspects along with the media literacy basics are new components in the media literacy training.

Thanks to the online platform, the suggested course has a long-lasting effect and is able to reach a broader audience. Today the online course remains accessible to everyone. It is worth noting the training was attended not only by students, but by teachers, lecturers, and researchers from other universities and scientific institutions. It made possible to extend the course. The online platform contains ready-made learning materials in Ukrainian and English, which can be exploited in group work. Furthermore, after completing the online final test, each trainee receives a certificate that confirms his achievements and states that the learner has enhanced his qualification. We consider it to be an additional incentive to gain media literacy knowledge and skills.

In compliance with the proposed method, the educational content is targeted at forming ICT competencies of scientific and teaching staff, employees of ICT departments, postgraduate and undergraduate students who should know how to use diverse cloud-oriented systems and services in their research and educational process.

The proposed method combines blended learning, verbal (lectures, explanations, discussions), practical (laboratory and practical works, exercises, problem-solving), and online learning methods (distance learning).

Forms of teaching and learning: lectures, practical and laboratory works, group and individual work, optional and training sessions, elucidations and individual consultations.

Means of education: informational educational materials placed on the website of the training course, cloud-oriented electronic educational resources, platforms and services (Google Apps for Education), social network tools and resources (Facebook, etc.), and information resources of the Internet.

Results: widen access to ICT training tools, improved organization of pedagogical researches, enhanced ICT competences of participants of the learning process.

There are two ways to carry out teaching by this method:

- to implement the Media Literacy Technologies in Educational Activities course as a special course for training, retraining, advanced training and further education of scientific and teaching staff;
- to introduce a system of trainings, seminars, webinars, individual consultations, arranged as a pilot experimental study (project) to develop the educational and scientific environment for media literacy courses in an educational establishment.

3 Conclusions and Discussion

The most striking result to emerge is that blended learning was able to improve students' media literacy level after five sessions. It is crucial to note that it significantly exceeded of information materials provided during previous courses based on the traditional F2F learning method. While previous media literacy courses included three to five sessions per each main and supplementary topic, the blended learning-based course allowed incorporating all main topics into five in-class sessions combined with the online ones.

The Quantitative data processing showed that the average media literacy level after the course increased by 31.1%. Thus, blended learning clearly has an advantage over the traditional leaning methods.

The results of this study suggests that blended learning helped:

- to include all the materials of the Media Literacy training in a 5-session course consisted of both in-class and online lessons;
- to increase the number of practical classes;
- to insert the elements of psycholinguistics and information technologies;
- to widen the audience, who could join the course via its online version.

In general, everyone can take the free online course and get a certificate after the successful completion of the online test. The certificate will confirm the learner's achievements. In addition, a media literacy course based on blended learning is seen as part of inclusive education since it allows persons with disabilities to acquire the necessary knowledge and skills to be engaged in the contemporary information society.

References

1. Andrade, D.: Blended Learning – What is it, Pros/Cons, Tips and Resources (2015) <http://educationaltechnologyguy.blogspot.co.uk/2015/02/blended-learningwhat-is-it-proscons.html> (2015).
2. Bonk, C.J. & Graham, C.R.: Handbook of blended learning environments: Global perspectives, local designs. Pfeiffer Publishing, San Francisco, CA (2006).
3. Bykov, V. Y., Burov, O. Y., & Dementievskaya, N. P.: Cyber security in a digital learning environment. *Information Technologies and Learning Tools* 70(2), 313-331(2019).
4. Hogan, M., Ojo, A., Harney, O., Ruijter, E., Meijer, A., Andriessen, J., ... & Groff, J.: Governance, transparency and the collaborative design of open data collaboration platforms: understanding barriers, options, and needs. In: *Government 3.0–Next Generation Government Technology Infrastructure and Services*, Springer, Cham, 299-332 (2017).
5. Krylova-Grek, Y.: Peculiarities of information science based on the pilot course “Psycholinguistic basics of media literacy”. In: *Challenges and the Barriers in Open Education*. 13th conference reader. June 25-26, Prague (2018).
6. Krylova-Grek, Y.: Advanced Information Technology Tools for Media and Information Literacy Training. In: *Proceedings of the 15th International Conference on ICT in Education, Research and Industrial Applications. Integration, Harmonization and Knowledge Transfer. Volume II*, CEUR-WS, 2393, 229-240 (2019).
7. Kuzminska, O., Mazorchuk, M., Morze, N., Pavlenko, V., & Prokhorov, A.: Study of Digital Competence of the Students and Teachers in Ukraine. In: *International Conference on Information and Communication Technologies in Education, Research, and Industrial Applications*, Springer, Cham, 148-169 (2018).
8. Ligorio, M. Beatrice, Sansone, N.: Structure of a Blended University Course: Applying Constructivist Principles to Blended Teaching. In: *Information Technology and Constructivism in Higher Education: Learning Frameworks*, 216-230 (2009).
9. Mihaylova N. V.: Moodle electronic learning environment as a means of organizing asynchronous independent work of university students: PhD dissertation: 13.00.01. - Orenburg, 2012 (2012).
10. Ovcharuk O.V.: Current approaches to the development of digital competence of human and digital citizenship in European countries. *Information Technologies and Learning Tools* 76(2), 1-13 (2020).
11. Osagie, E., Waqar, M., Adebayo, S., Stasiewicz, A., Porwol, L., & Ojo, A.: Usability evaluation of an open data platform. In: *Proceedings of the 18th Annual International Conference on Digital Government Research*, 495-504 (2017).
12. Pavleska, T., Školkay, A., Zankova, B., Ribeiro, N., & Bechmann, A.: Performance analysis of fact-checking organizations and initiatives in Europe: A critical overview of online platforms fighting fake news. *Social media and convergence*, 29 (2018).
13. Pinchuk, O. P., Sokolyuk, O., Burov, O. Y., & Shyshkina, M. P.: Digital transformation of learning environment: aspect of cognitive activity of students. In: *Proceedings of the 6th*

Workshop on Cloud Technologies in Education (CTE 2018), KryvyiRih, Ukraine, December 21, 2018, CEUR Workshop Proceedings 2433, 90-101 (2019).

14. Porwol, L., Ojo, A., & Breslin, J. G.: Social software infrastructure for e-participation. *Government Information Quarterly* 35(4), S88-S98 (2018).
15. Rice, William: *Moodle 2.0 E-Learning Course Development*, Packt Publishing (2011).
16. Sansone, N., & Cesareni, D.: Which Learning Analytics for a socio-constructivist teaching and learning blended experience? In: *Journal of E-Learning and Knowledge Society*, 15(3), 319-329 (2019).
17. Scardamalia M., & Bereiter C.: Knowledge building: Theory, pedagogy, and technology, in: K. Sawyer (eds.) *Cambridge handbook of the learning sciences*, New York, Cambridge University Press, p. 97-118 (2006).
18. Siemens, G., Gašević, D., & Dawson, S.: Preparing for the Digital University: a review of the history and current state of distance, blended, and online learning. Athabasca University, <http://linkresearchlab.org/PreparingDigitalUniversity.pdf> (2015).
19. Slovak, K.I., Semerikov, S.O., Tryus, Yu.V.: Mobile mathematical environment: current state and development prospects. *Naukovyi Chasopys M.P. Dragomanov, series 2 "Computer Oriented Learning Systems"*, 19(12), 102-109 (2012) (in Ukrainian).
20. VeryVerified: A Course on Media Literacy was developed by IREX in collaboration with EdEra. VeryVerified is part of Learn to Discern in Education (L2D-Ed) project funded by the U.S. Embassy and the British Embassy in Ukraine and implemented by IREX with support from the Ukrainian Ministry of Education and Science, <https://verified.ed-era.com/ua> (2019).
21. Yan, Zh., Robertson, T., Yan, R., Sung, Yo. P., Bordoff, S., Chen, Q., Sprissler E.: Finding the weakest links in the weakest link: How well do undergraduate students make cybersecurity judgment? *Computers in Human Behavior*, 84, 375-382 (2018).