

The Use of Moodle in the Teaching of Philosophy and Distance Learning

Andrii I. Abdula¹^a, Halyna A. Baluta¹^b, Nadiia P. Kozachenko¹^c, Darja A. Kassim²^d and Feliks M. Zhuravlev²

¹*Kryvyi Rih State Pedagogical University, 54 Gagarin Ave., Kryvyi Rih, 50086, Ukraine*

²*State University of Economics and Technology, 5 Stepana Tilhy Str., Kryvyi Rih, 50006, Ukraine*

Keywords: Philosophy, Critical Thinking, Soft Skills, Reflexive Learning, Test Control, Moodle, E-Learning Environment, Education During a Pandemic, Distance Learning of Philosophy, Risk Society.

Abstract: The paper highlights the importance of philosophy and special philosophical disciplines for the modern general education, assuming their role in the soft skills training, and more concretely in developing critical thinking in students. However, the emerging trend of reducing the university philosophy courses can make it difficult to fulfill this role in full. In this context using the distance learning tools and learning management systems can help to provide an appropriate educational environment (also in view of the current pandemic situation) to ensure the sufficient level of learning outcomes in philosophical literacy and critical thinking skills. Moreover, the modern e-learning tools and technologies can facilitate the involvement of students into the global educational space and promote development of their lifelong learning skills. In elaborating a virtual learning environment for philosophy courses, one has to take into account certain features of philosophical disciplines, which are instrumental in their structure and may cause some difficulties by its implementation. Namely, the learning outcomes in philosophy courses may not easily be parametrized, philosophical questions often allow for multiple alternative answers, and philosophical discourse is essentially communicative. Remarkably, the Moodle learning management system is well suited for addressing these issues and enhancing the learning process. To this effect we propose various task types to maintain high standards of learning achievements: test control in the flipped classroom, control of work with primary sources, control of self-study, test implementation of interim thematic control. In this way the Moodle system can well be regarded as an efficient virtual tool for an on-line support of a general philosophy course. Still, one should be fully aware that this tool can only play a supporting role and cannot entirely replace a substantive philosophical dialogue actually occurring either in a “physical” classroom or by means of a video-conference platform (such as Zoom, Google Meet, etc.). Modes of study, directly related to communication, are integral part of the methodology of philosophy and its teaching, since philosophy itself is a discursive and pluralistic field. Nevertheless, taking into account the features of the discipline, it is possible to provide not only an effective test control, but also to implement a number of general educational goals, such as updating the basic knowledge, memorization, activating the cognitive interest, developing the ability to reason, and – last but not least – the skill of acquiring and assimilating information. The paper presents a comparative statistical analysis of the student academic achievement by studying philosophy in a lecture room and distantly during the pandemic.

1 INTRODUCTION

Reforming of the education system should be provided for in response to public demand and information standards of the world educational culture, which is focused on the formation of key competences of

participants in education (Shokaliuk et al., 2020). In education, the process of transformation requires revision and reassessment of the humanities, especially philosophy, as it should be regarded as a powerful methodological platform, which leads to successful solving of the tasks outlined in the national educational strategy.

^a  <https://orcid.org/0000-0001-5484-1639>

^b  <https://orcid.org/0000-0002-4772-9240>

^c  <https://orcid.org/0000-0003-2358-9076>

^d  <https://orcid.org/0000-0002-1750-1237>

1.1 Outlining the Problem

Scientific and technological advance shows a notable paradox: on the one hand, society seeks accelerated development to achieve pragmatic results; on the other hand, this advance causes dangerous transformations of biosocial reality characterized by low levels of prediction, uncertainty about the future events. The constant growth of life threats is a reason to assess these trends as “risk trends”. In our opinion, modern education is not relevant without considering the situation of risk as a “measure of unexpected danger” (Giddens, 1990). We view risk in its positive sense as a “rational way of mastering reality”, which is the prospect of rational construction of a new type of educational culture, including a “diversification” constant. Thus, on the one hand, the 2020 pandemic caused long-term social isolation, which led to a clear understanding that social stability, is the result of a comprehensive justification of “protective”, premature social and, in particular, educational strategies, and, on the other hand, it showed new tools and opportunities, emphasizing the effectiveness of distance learning (Polhun et al., 2021).

What are the trends and resources of educational culture focused on preserving the educational base in the current situation? Undoubtedly, a high-quality, balanced resource of distance learning justified itself as a full-fledged type of education, having been developed from, in a certain sense, experimental education to a global educational network. In 1969, the first university of distance education, the Open University, was opened in Great Britain. Nowadays, it is an educational centre playing an essential role in the social and economic life of the country (Open University, 2021).

In the UK, the Quality Assurance Agency for Higher Education praised the quality of the educational process at universities, involving a wide range of distance learning technologies. Widespread use of “distance technologies” has formed the paradigm of “distance education” with the following concepts: “distance reaching”, “emergently organized distance teaching”, “test tools”, “independent assessment”, “distance learning”, “distance counseling”, “e-learning”, “blended learning”, “online learning platform”, “learning management system”, etc (Syvyi et al., 2020; Vlasenko et al., 2020). The centres of distance education work successfully in other countries.

The pandemic situation has demonstrated a fine line between social and biological. As Badiou (Badiou, 2020) notes: “An epidemic is complicated because it is always a point of contact between natural

and social definitions. Its full analysis is transversal: it is necessary to understand the points where these two definitions intersect and derive the consequences from that”.

In our opinion, the new type of education presupposes the existence of a high-quality educational environment, which takes into account past and present experience, provides qualitative analysis of advantages and disadvantages, and successfully combines traditional and modern educational achievements with current social values. Thus, modern education type presupposes the existence of philosophical discourse, focused on the formation of critical, systemic, and other kinds of thinking, relevant sections of social ethics, especially, pedagogical, environmental, information culture in combination with e-learning technologies.

For it is necessary to introduce e-learning tools in the educational process, the educators should take into consideration the specificity of their implementation that allow to master the strategy of teaching philosophy on the basis of the online learning environment. Thus, there is a need to outline the educational perspectives of philosophy teaching with the involvement of online learning environment and to identify the particularities of the use of test tools in this process.

The experience of the rapid transition to distance education has well demonstrated the peculiarities, pros and cons of the distance learning management and, in particular, in the teaching of philosophical disciplines. On the one hand, these features are already familiar. On the other hand, new characteristics became apparent due to the peculiarities of the social situation, the features of the national education system and the peculiarities of the subject itself.

Therefore, in our study, based on our work (Abdula et al., 2020) we aim to consider the general features of Moodle as a tool of creating of the e-learning environment, the features of using this platform in teaching philosophy and analyze the relevant results of distance learning in quarantine 2020.

1.2 Analysis of Recent Research and Papers

The issue of the placing philosophical disciplines in the educational space is considered by scholars all over the world. The research paradigm is represented in (Crawford et al., 2005; Dewey, 1904; Halpern, 2014; Hintikka, 2007; Lakhuti, 2014; Quitadamo and Kurtz, 2007; Lipman, 2012), and others. The national tradition includes the publications (Karapetian, 2020; Kopotun et al., 2020; Terno, 2012). Dewey (Dewey,

1904) was one of the first educators who prioritized critical thinking in education. He believed that the main drawback of traditional education was its focus on refined knowledge, devoid of analytical processing. John Dewey outlined a new “reflexive” style of education, as reflection makes it possible for a student to perceive the object from different viewpoints. The philosopher notes that “knowledge” does not mean understanding; certain information does not guarantee that the opinion can get the right direction (Dewey, 1904). Hintikka (Hintikka, 2007) describes critical thinking as an opportunity to combine different perspectives, as a crucial resource, focused on the search for cognitive distortions. He thinks that to teach how to think and analyze is a huge challenge from education to philosophers (Lakhuti, 2014). The researcher substantiates the notion of Socratic epistemology as a special cognitive strategy, which has a dialogical form (Hintikka, 2007).

Standard educational programmes cannot achieve such progress in the development of cognitive skills, as the programmes, including the development of critical thinking. The author of an educational programme focused on reflective thinking Lipman (Lipman, 2012) admits that teaching thinking skills is different from the ordinary acquisition of academic knowledge. He substantiates the idea of higher order thinking, which synthesizes creative, moral, ethical and critical thinking. Lipman (Lipman, 2012) considers the ways of thinking as necessary modes of reflective educational practice. Lipman’s approach was developed by Sanchez-Ruiz et al. (Sanchez-Ruiz et al., 2015), Reid and Anderson (Reid and Anderson, 2012) and others. Therefore, the reflexive paradigm highlights reflective and dialogic strategies as a development of personal autonomy embedded in a special space of mutual open-mindedness for joint exploration and discovery.

The use of the potential of philosophy in the development of critical thinking and other important competences is complicated due to several reasons. Firstly, the place of philosophy in a number of general educational courses is uncertain. Secondly, it is complicated to transfer the content of philosophical disciplines to e-learning platforms.

The practical implementation of distance learning is based on one of the most promising online learning platforms, which is actively implemented in the educational process and facilitates its modernization – Moodle. In the current educational discourse, the potential of using e-learning platforms is considered in various aspects (Astafieva et al., 2020). Petrenko (Petrenko, 2017), Pienkin and Yatsenko (Pienkin and Yatsenko, 2014) consider Moodle as an important

component of the provision of distance education and blended learning. Zhelezniakova (Zhelezniakova, 2016) treat it as prerequisite for realization of the students’ self-management capacity. Myshchyshen (Myshchyshen, 2011) considers Moodle as tools of information and communication support to the process of advanced training. Avdieiev (Avdieiev, 2015), Oproiu (Oproiu, 2015) draw attention to the fact that Moodle is a way to optimize the educational process in higher educational establishments. For Nedilko et al. (Nedilko et al., 2017) Moodle is a key aspect of quality of professional training of future specialists. Holotescu et al. (Holotescu et al., 2014) outline that e-learning platforms provide students’ involvement in the global educational space and the development of lifelong learning skills. The use of e-learning platforms is also considered in the context of globalization, changes in the institutional status of the education system (Triakina et al., 2018). Biletska (Biletska, 2013), Horshkova (Horshkova, 2015), Mintii (Mintii, 2020), Semenets (Semenets, 2017) draw attention to the considerable practical experience of using Moodle in the process of teaching exact mathematical sciences and natural sciences. Dolynskiy (Dolynskiy, 2013), Akulenko (Akulenko, 2012), Shalatska et al. (Shalatska et al., 2020), Ustinova et al. (Ustinova et al., 2019) show that Moodle can be used by teaching social science and humanities.

1.3 Unsolved Aspects of the Problem

Unfortunately, there is a dangerous tendency in the national education to curtail the humanities, especially philosophy, ethics, aesthetics, cultural studies, etc. They are losing their positions, undermined by the tendencies of educational instrumentalism and vital pragmatism. The reasons of such situation are as follows: the relativization of the educational culture, the lack of definition of standards of quality of education, as well as rigidity, the firm rootedness of the “monopolized” post-Soviet educational tradition. After a few decades, philosophical subjects focused on Marxism lost their relevance, as they reproduced the structures of crowd psychology, the realized ideological function and function of identity formation. As a result, philosophy focused on Marxism created a false stereotype about its uncertainty or even its uselessness. Thus, a hidden paradox has emerged: the minimization of the humanities in education contradicts current educational strategies, outlined in the Law on Education.

Among the educational competences defined by the Law on Education, there are a number of extracurricular competences, which, in our opinion, pro-

vide for an in-depth mastery of a philosophical resource. According to the Law on Education, “common for all competences are the following skills: reading with understanding, a skill to express one’s opinion orally and in writing, critical and systemic thinking, ability to logically justify one’s position, creativity, leadership, ability to manage emotions in a constructive way, assess risks, make decisions, solve problems, ability to cooperate with other people” (Verkhovna Rada of Ukraine, 2017). Thorough analysis of the subject field, included in the scenario of achieving the stated goal, implies a direct mastery of the information product of philosophical genesis. Instrumental competence, which means performing technical procedures and operations, ways of determining information adequacy, criteria for trust in an information source, etc., is also particularly relevant.

Therefore, the main unsolved aspect of the problem is the question of whether the information, purified from philosophy, is sufficiently efficient in competitiveness of education if it is considered as a complex product, formed by long-term research selection by historical trial and error and as the result of successful, balanced, and projected educational programmes, focused on education and society, theory and practice. The implementation of electronic support in the teaching of philosophy is also important. However, the specific nature of philosophy as a subject should be taken into consideration. Using e-learning platforms is a definite challenge of the modern times, so the educators need to respond to it adequately.

Nevertheless, the following question arises: how and to what extent can we trust e-learning, in training philosophy and other humanities?

Instrumental and information competence becomes more topical. We may define it as the implementation of technical procedures and operations; the ways to determine information adequacy, criteria of its quality and trust in the source of information; the independence of information processing and reproduction based on academic integrity.

The previous research did not focus on the analysis of the complex specific character of modern education, its socio-ethical orientation, unapparent but important problem areas of distance learning, the research of the causes and factors of their elimination. These highlight a broader horizon of research. The main unresolved aspects of the problem are the following issues: whether learning management, cleansed of philosophy, is effective enough to provide competitive education as a complex social product; whether distance education can be considered as a universal learning tool that gives a sustain-

able result; whether distance education has the opposite effects and drawbacks arising due to the “dissolution” of participants of the educational process, who are in a “closed” e-learning environment. Thus, the objective of the paper is to reveal the peculiarities of electronic support of teaching philosophy, highlighting its subject specificity on the basis of methodically substantiated forms of test control.

2 THEORETICAL BASIS OF THE RESEARCH

As Shunevich (Shunevich, 2011) emphasized the formation of the theoretical framework of distance learning dates back to the 60s of the 20-th century. Shunevich (Shunevich, 2011) follows the classic of distance education Keegan (Keegan, 1980) and notes that the prolonged absence of theory has weakened distance learning. In the article “Comparative Analysis of Early Foreign Theories of Distance Learning”, he describes the autonomy of the student in the educational process, emphasizes the fundamental difference between classical and distance learning (Shunevich, 2011). What is the essence of distance learning? The e-learning course is an artificial, dialogical opportunity for learning, in which the bridge between the student and the institution is an artificial signal carrier (Shunevich, 2011, p. 106). That is why, in our opinion, the e-learning platform should contain the parameters inherent in the process of natural learning with its flexible, multidimensional potential: forms, methods, tools, technologies, etc.

If philosophy is considered as a source of critical thinking, the method of its formation appears as a combination of different models of learning. It is clear that “rigid models” are typically suitable for individual tasks, while “soft models” dominate when there are atypical problematic situations with uncertainty potential. Such models play a special role in the process of personality formation. “The development of critical thinking is just such a task that can be solved with the help of a soft learning model”, says Terno (Terno, 2012, p. 18). Methods of the critical thinking development require a set of conditions that include problematic situations, knowledge of critical thinking strategies, creating choice situations, making a dialogue, giving students’ opinions in writing, the right to correct mistakes, etc. This system of learning implies its openness, plasticity, the presence of variations and feedback.

Individual-oriented project methods and dialogue play a special role, as they are focused on reconstructing the educational participants’ individual ex-

perience. The methodology is based on the following principles: identifying and denying assumptions, verifying accuracy of facts and logical consistency, examining context and exploring alternatives (Terno, 2012, p. 18). In our opinion, this is the way in which the monologic “banking” or fixed teaching is reoriented to qualitatively developing innovative model.

Such a guideline was taken into account by the community of lecturers of the Philosophy Department in Kryvyi Rih State Pedagogical University in the process of teaching the course “Philosophy” with its positive consequences. Firstly, the philosophical resource was preserved as a source of formation of different types, styles of thinking, a methodological platform for learning the variety of the best examples of world philosophical culture. Secondly, the structure of the course, the logic of its presentation, demonstrated the effective implementation of a number of tasks of informative and constructive content, as it successfully combined the traditional informative or lecture-seminar system of education and the modern pedagogical approaches, which necessarily include person-oriented techniques. And fourthly, we would like to draw attention to the advantages and problems caused by using e-learning management systems in general and, in particular, by using Moodle, taking in consideration the global challenges of the COVID-19 pandemic.

Thus, there was a need to combine the critical resource of philosophy and the tools, provided by the e-learning environment. Obviously, such a combination could not have been a perfunctory transfer of the course to an online learning platform. However, it also requires both the peculiarities of the course and the specifics of the chosen platform. We used Moodle as such e-learning platform.

In our opinion, we should consider the particularities of using Moodle, taking into account the global challenges, tasks and problems that cause the reform of the education system in Ukraine. Moreover, it is necessary to pay attention to features of use of the platform in comparison with similar systems. Thirdly, it is necessary to demonstrate the expediency of appealing to Moodle, in the context of teaching the social sciences and humanities, especially philosophy.

As for the first aspect, we should admit that the implementation of Moodle is increasingly correlated with the prospect of implementing the principles of blended and distance learning, taking into account that the latter is a relatively new phenomenon in the educational space of Ukraine (Bondarenko et al., 2018). Petrenko (Petrenko, 2017) says: “The use of modern information and communication, electronic technologies in combination with pedagogical expe-

rience will allow to raise higher education in Ukraine to a higher level” (Petrenko, 2017, p. 140). This problem is also considered in the context of globalization, changes in the institutional status of the education system and the integration of the national education system into the European educational space (Petrenko, 2017, p. 116). In response to these challenges, the scholars draw attention to the following benefits of distance learning: the ability to save considerable amount of time while displaying significant amounts of information; focusing on the specific achievements of each student; ensuring the relative independence of the process of communication between the student and the teacher from the place and time, organization of control and planning of students’ independent work in the conditions of reduction of class hours and transition to the credit-modular system, etc. (Lavrentieva et al., 2019, p. 102), (Zhelezniakova, 2016, p. 34). In general, these characteristics have economic, operational, informational and pedagogical dimensions (Myshchyshen, 2011, p. 98). Unlike distance learning that requires using ICT, blended learning presupposes a combination of different forms of activities (traditional, distance, electronic, etc.), at the same time it takes advantage of distance learning and eliminates its disadvantages (Petrenko, 2017, p. 141). An important tendency of recent years is the increasing level of integration of distance and traditional learning (Petrenko, 2017, p. 6).

As for the second aspect, we should mention that there are several groups of e-learning organization software: copyright software, learning management systems, content management systems, and educational content management systems (Pienkin and Yatsenko, 2014, p. 105). Among these tools, one of the most suitable for higher education institutions is the open source distance learning platforms, to which Moodle belongs (in general, there are a great number of such systems: ATutor, Claroline, Dokeos, Sakai, Prometheus, etc.) (Pienkin and Yatsenko, 2014, p. 106). A considerable number of scholars think that Moodle has certain advantages over other similar systems. The evidence is the considerable number of users who have chosen this system (about 90 million people (Petrenko, 2017, p. 140)), as well as the fact that it is used by educational institutions in more than 100 countries (Pienkin and Yatsenko, 2014, p. 106), demonstrating positive statistics of students’ involvement (Oproiu, 2015, p. 428–430). The basis for the functioning of this system is based on the principles of social constructivism, according to which, the teacher is regarded as an assistant and mentor; training is carried out in activity; self-presentation and self-realization of students are provided; the learn-

ing environment is flexible, able to adapt to specific needs; the student can observe and respond to the activity of participants in the educational process (Teplytskyi et al., 2015). Accordingly, Moodle allows to organize distance learning in such a way that it meets the today's didactic requirements: regularity, systematic character, objectivity of control, individuality, economic efficiency, that is, it is fully capable of completing the tasks assigned to it (Avdieiev, 2015, p. 7).

Other advantages include: openness of the system, ability to adapt to specific tasks and types of activities; providing ample opportunities for communication and data exchange; the availability of a flexible evaluation system and opportunities for statistical analysis of performance; versatility and simplicity in using (Pienkin and Yatsenko, 2014, p. 106). An important argument in favour of Moodle is that as an open source system, it can be freely distributed, applied and modified (Pienkin and Yatsenko, 2014, p. 141).

Moodle is quite capable of providing the distance learning functions assigned to it, but it should be admitted that the use of a virtual learning environment has its peculiarities when it supports training courses in philosophical disciplines.

- (1) *The complication of parameterization of learning outcomes.* This is due to the fact that all philosophical disciplines and, first of all, philosophy involve the teaching of thinking, and not just memorizing the biographies of a number of philosophers and difficult obscure terms. Obviously, this peculiarity is inherent in other courses, but the main difference is that the results of teaching philosophy are very difficult to calculate and quantify. This problem is typical, in general, for determining the level of competence formation, which does not reduce to specific knowledge, abilities and skills. We have discussed above the competences, which include, inter alia, environmental competence and information and communication competence, lifelong learning, civic and social competences related to the ideas of democracy, justice, equality, human rights, well-being and a healthy lifestyle, with an awareness of equal rights and opportunities; cultural competence. For this type of competence there is a problem of verification, parameterization, quantification, the solution of which would make it possible to simply revision of the level of their formation by tools of e-learning, where testing is particularly convenient and widespread.
- (2) *The plurality of approaches.* The second problem is related to the specificity of philosophy, namely

its pluralistic nature. Philosophy cannot be represented as a single holistic entity, the conventional result of a study of the existing philosophic community. Philosophy is a constant development of thought, which consists in asking questions, finding answers and constantly rethinking them. Thus, any reference or educational material in philosophy bears a significant imprint of the philosophical position of its author, which cannot be considered universally acceptable to all participants in philosophical discourse.

- (3) *Communicative nature of philosophy.* There was an experiment when the android Bina48 gave a lecture on philosophy (Palmer, 2018). Its results show the achievements of robotics, but they do not mean a breakthrough in the teaching of philosophy. The main results of the teaching of philosophy are formed in the course of communication; they are argumentative and critical skills, values and socio-cultural competences.

For the use of e-learning courses is an up-to-date challenge that can greatly enhance students' cognitive activity through interesting activities, the philosophy teacher must find ways to integrate these activities into the learning process and use them in a way that does not deteriorate, but rather improve the quality of philosophy teaching. Obviously, it is simply impossible to fully implement a philosophy course on an e-learning platform without communicating with a teacher. It is not only about teacher's support in forums, chats, ongoing consultations and other forms of feedback, but it is also about full-fledged group seminars, involving pluralism of thoughts, discussions, and critical, philosophic reasoning in real-time.

3 RESULTS OF THE RESEARCH

In teaching philosophy, not all activities are reduced to face-to-face communication. The student has to develop skills of individual work, be able to work with primary sources, to carry out relations and systematization, to draw conclusions, to reason the opinion and to express it and so on. Thus, in the process of philosophy teaching, it makes sense to use e-learning courses as a support of full-time study, which allows to cover other activities of the student and to evaluate his or her individual work. Let us consider some of the techniques of using a Moodle-based e-learning course and their peculiarities in philosophy teaching, using the Moodle controlling tools in the philosophy course.

3.1 Test Control in the Flipped Classroom Model

Firstly, the thing that makes Moodle convenient is to provide theoretical material. This approach makes it possible to use the flipped classroom model when students are introduced to the lecture material before the lecture begins. Then, the lecture itself is based on explaining the most interesting points of the topic, discussing problematic and incomprehensible parts of the material.

It is advisable to combine the flipped classroom model with the simplest test to check whether the students have read the material to the lecture. Test tasks most often involve the literal reproduction of text and they perform two functions: checking for content understanding and activating memorization.

We should admit that the test assessment of the quality of the philosophy study is quite complicated and, when provided formally, it usually has a negative result. Firstly, ordinary tests are mainly focused on checking the memorization of certain characteristics, terms and names, which is quite possible without understanding the essence of the philosophical concept. Secondly, tests without any material, given in advance, provide students with a choice of a textbook or other reference sources. In the case of philosophy, it cannot be guaranteed that the opinion of the author of the test coincides with the way the relevant material is presented in the textbook chosen by the student. Thus, it is advisable to limit the use of simple verification tests as a control measure in the virtual accompaniment of philosophy training to the following parameters: (1) tests can only serve as a tool of the simplest control of familiarization with the material before the lecture; (2) tests should be directly bound to, and limited to, the material provided.

It is necessary to mention some technical points. Moodle allows you to create various types of tests. For this purpose, it is quite convenient to use several test types: multiple choice tests, tasks with short answer, matching tasks, built-in answers, gap texts, true or false statements. The most problematic types of tasks are multiple choice tests and gap texts, where a student has to fill in the missing words. In Moodle multiple choice tests are implemented very well, if you do not take into account the following feature: if the student selects all the answers, he or she will be assessed as having chosen all the right answers. Therefore, while creating the test, it is advisable to use the penalty for incorrect answers, which is realized by negative indicators.

Missed word assignments or the gap texts differ from short answers in that regular “*” expres-

sions to substitute any character sequence cannot be used. Missing words should be filled in, so there is a serious spelling problem. If we do not consider the cases of the students' illiteracy or carelessness, we deal with the instability of Ukrainian-speaking philosophical terminology and the lack of a stable tradition of Ukrainian transliteration of the philosophers' names. For example, “Leibniz” can be spelled in Ukrainian as ‘Лейбніц’ – ‘Лейбниц’ – ‘Лейбніць’ – ‘Ляйбниць’ – ‘Ляйбніць’ and etc. There are several ways out of the situation. For example, it is possible to provide students with accurate spelling, to familiarize them with the terms to be used in the tests, and to provide clear instructions for completing this type of assignment.

3.2 Test Control of Independent (Out-of-Class) Learning

The university course in philosophy provides much of the material that the student studies out of the classroom. It is necessary to state that making notes and writing assignments are irreversibly out-of-date, but this should not be considered as a negative trend. Rewriting and reproduction is rapidly inferior to speculating and evaluation, which should be reflected as a change in teaching methods, especially in philosophical courses that have a world-view forming task. Independent study in a philosophy course means that the student works on certain themes for which the student has been provided with the relevant list of references. However, no one can guarantee that the student will not use Google search engine as the primary source of answers instead of reading recommended textbooks and sources. In such situation, one can find some positive aspects, as independent work involves familiarity with fairly standard concepts, definitions and personalities. Thus, doing simple tests for choosing names, book titles, philosophical directions will not be superfluous, and it will allow the out-of-class study with the online learning environment should also include tasks that do not provide obvious answers that pop up in the first search engine rows. So, it is advisable to develop tasks that help the student to master the material submitted for self-study. It is appropriate give the student a task to analyze the text where the student is offered to choose a statement that most fully reflects the main idea of the text, or a statement that contradicts the text, a statement that may or may not a conclusion.

The skill to work with primary sources, analyze them and correlate with the theoretical material described in the textbook is an important type of students' activity while studying philosophy. The pri-

mary sources are often discussed at the seminar, but this kind of work can be successfully implemented through the online support of the Moodle training course. In addition to widespread multiple-choice tasks and built-in answers, it is appropriate to use gap texts and true or false statements. Moreover, it is necessary to focus not on the literal reproduction of the text of the primary source, but on realizing the author's opinion and on correlating it with the philosophical direction or tradition to which the author of the text belongs. The re-writing tasks showed good results in "true or false statements", when the opinion presented in the source text is formulated in other words.

The specificity of test verification of out-of-class study is the need to set a deadline clearly. This is due to the fact that most of these tasks are woven into the canvas of the classroom material and their untimely fulfillment breaks the logic of teaching. On the other hand, the student should understand that out-of-class study is as chronologically regulated as activities in the classroom, which are carried out on schedule. The method of self-study is not regulated. It is focused on checking the results; thus the student develops skills of self-study, self-control and planning.

3.3 Test Implementation of Interim Thematic Control

The possibility to make full use of test tasks for interim control is also limited. Firstly, it does not justify setting a high score for these types of control, so it stimulates some manifestations of students' plagiarism, because it exists in a form of distance learning. Secondly, thematic control does not imply the availability of ready-made material, as in the case of preparation for an "flipped classroom" or an activity for checking understanding of primary sources. Thirdly, thematic control should be designed not only to check what students have memorized, but also to presuppose tasks that require speculation and reasoning. Thus, it is appropriate to use such tasks as matching, multiple choice tests, but with a slightly more complicated formulations. The challenges of finding a mismatch, finding an error, or finding the wrong answer are considered to be fruitful. The task of matching statements with authors has also shown good results as well as the tasks for chronological ordering. In addition to testing knowledge, the matching tasks also have a cognitive load: it is convenient to offer students a number of characteristics of philosophical directions or doctrines, which are usually opposed, in order to relate them to these areas (here it is appropriate to create the task in such a way that the character-

istics are distributed evenly and not more than three parameters, optimally two). It is appropriate to offer students assignments for reasons that involve establishing a pattern, continuing a logical chain, choosing the causes or effects of a particular position.

We should draw attention to the task of drawing conclusions in which students are asked to select all the correct conclusions (or one) from the text proposed. In the simpler version, it is a reformulation of the thought, in a more complex one, the logical or substantive consequences generated by the idea demonstrated in the text. Test for matching is convenient to use as an extension of the test for true or false statements, because it allows you to evaluate a number of statements at once by correlating them with the choice of true/false.

The result of thematic control in this form is not only the score expressed in points, but also a certain broadening of the student's horizons. Obviously, in the development of in-class and out-of-class activities, the student does not focus on reading the works of the philosophers mentioned above, but focuses primarily on short theoretical information that can provide a clear answer to the questions of the seminar or the assignment for out-of-class study. Philosophy does not provide such answers. The teaching of philosophy involves the formation of the skills of contextual, discursive analysis, aimed at clarifying the course of reasoning of a particular philosopher, which leads him to certain conclusions. The mentioned test organization achieves at least two goals: firstly, it familiarizes students with the aphorisms and important quotations of the classics of philosophy, shows their depth, and secondly it develops the skills of philosophical analysis and intensifies educational interest. An indirect, but pleasant, consequence is that students remember the names of philosophers and basic philosophical terms.

4 RAPID APPROBATION OF DISTANCE LEARNING PHILOSOPHY

One of the main challenges for the education system worldwide has been the COVID-19 pandemic. The pandemic, as well as the severe restrictions imposed by governments of different countries to subdue the rapid outbreak of the disease, has affected the functioning of the social, economic, and political spheres of society and has significantly transformed all components of the learning process.

A key component of these changes is the active in-

roduction of distance learning technologies at different levels from radio, television, and text messaging to full-fledged online learning (World Bank, 2020). As a rule, the leading role in this process was given to learning with the support of recent information and electronic technologies, the use of multimedia and e-learning. Such learning is known to involve two approaches: (1) asynchronous learning via the media, e-mail, discussion forums, where students and teachers do not have to be online together; (2) synchronous learning through video conferencing and live chat, allowing students and teachers to feel directly involved in the learning process rather than isolated from it (Lisnani et al., 2020). The responses to the decisions to control the risks and how to minimize their impact on the students by implementing all components of e-learning are as follows: using new educational technologies such as Learning Management Systems (LMS) of Moodle, and Blackboard for providing communication, sharing course content, exchanging lecture notes, slides, and other materials, controlling knowledge, and using Zoom and similar software products to schedule, stream, or record classes is a response to risk control decisions and the way to minimize the impact of those risks on students by implementing all components of e-learning (Hamaniuk et al., 2020).

Simultaneously, such overall, albeit forced, transition to distance learning requires not only the justification and implementation of the necessary changes in the shape and content of the education process but also an assessment of its current and potential consequences. However, the practical experience of the rapid transition to distance learning allows us to identify a number of not only positive but also negative aspects. Thus, in a positive sense, the benefits of the transition to e-learning are revealed in several directions.

- (1) The general dimension include the active access to online resources to find the necessary information and materials, implementation of the function of recording lectures, meetings, benefits for personal growth and development (increasing computer literacy), increasing the use of available resources (Moodle and other platforms), updating technologies for the university.
- (2) The pedagogical aspect presupposes that students and faculty could join the latest technologies and teaching tools, master the technologies of blended learning, and receive the opportunity to work remotely (Oyedotun, 2020, p. 2). It is also emphasized that the use of LMS in the education process helps to facilitate e-learning, as it allows access to learning without time or place restrictions,

which is essential in the context of social isolation caused by the pandemic (Raza et al., 2021).

The negative aspects can be characterized as follows.

- (1) Limited material and technical base, lack of necessary resources, equipment, Internet access (which questions the possibility of providing a full-fledged e-learning mode, while the offline mode is insufficient), lack of permanent power supply in some countries.
- (2) Lack of sufficient qualifications, prior training and practical experience for both students and faculty.
- (3) Problems with ensuring high-quality teaching due to limited technical capabilities reduced students' interest in work and lack of teacher-student engagement.
- (4) Limited opportunities for monitoring knowledge and student malpractices.
- (5) Factors of psychological and social pressure in connection with the pandemic, etc (Oyedotun, 2020, p. 2).

This list of risks can be continued if we take into account the experience of implementing distance learning at Kryvyi Rih State Pedagogical University. Firstly, there is the lack of a single e-learning platform clearly defined at the state level. Secondly, methodological support has been developed insufficiently. Thirdly, there are significant technical risks associated with the insufficient capacity of the existing material and technical base, etc.

As the global studies with the sample of 30,383 students from 62 countries show that most students appreciate the support of the faculty and communication with the university community, but the lack of computer skills and the sense of increasing workload have not allowed them to achieve higher learning results in new conditions (Aristovnik et al., 2020).

These problems concern not only the introduction of distance learning in a particular country. They arise due to the limited nature of the technology itself, the reassessment of its ability to fully achieve its objectives, to respond to other global challenges that are not directly related to the COVID-19 pandemic. It is obvious that these problems are also connected to the specifics of the rapid and forced transition to distance learning (although, of course, economic, social or political factors can significantly reduce or, conversely, increase their acuteness).

Simultaneously, we should also pay attention to the peculiarities of the social or mental environment, the way of providing education in a particular educational institution, the features of the course (including

the cycle of philosophical disciplines), the possibility of their implementation by distance learning. As demonstrated by the analysis of changes in higher education in response to COVID-19 in 20 countries, the feedback from higher education providers could vary considerably and include both social isolation strategies and curriculum redevelopment for the transition to online learning (Crawford et al., 2020).

We will try to assess the consequences of the rapid transition to distance learning under quarantine restrictions, taking into account the specifics of the organization of education and the results of the final and current performance of the students at Kryvyi Rih State Pedagogical University (Ukraine).

The purpose of our analysis is the statistical generalization of the results of the current and final success of the students studying the course of philosophy with a different share of e-learning support. The analysis was carried out in the framework of teaching the course of philosophy in the second year of studying at Kryvyi Rih State Pedagogical University. The course of philosophy is taught for one year, so it lasts two terms. The final control is carried out in the form of an exam; the intermediate control is carried out only in the form of the sum of points received for the first term. The course provides the following distribution of hours by the types of activities: 34 hours of lectures, 34 hours of seminars, and 56 hours of self-study.

Traditionally, the course is taught entirely in the classroom, and Moodle is usually used to control the progress of the students' mastering the themes for self-study, to provide references and additional materials, and to support the work of part-time students. Since March 2020, educational institutions have been to significantly expand the use of learning management systems and online platforms. For the course of philosophy, such systems were mainly Moodle and Zoom. Thus, with the implementation of e-learning, a big share of the classroom material was presented in Moodle: the texts of the lectures, materials to prepare for seminars, primary sources with the tests to them to assess how the students have mastered the material. Besides, the teachers continued to hold classes according to schedule, but with the help of Zoom.

It is obvious that the organization of the learning process was not immediate; the adaptation to the new learning environment took place until about the end of April. It is easy to track, considering students' speed of scoring. To do this, we can compare the increase in the ratio of the total number of points in each seminar of the second term to the number of students in the group that did not have an experience of e-learning and the group that experienced distance learning in

the second term (figure 1).

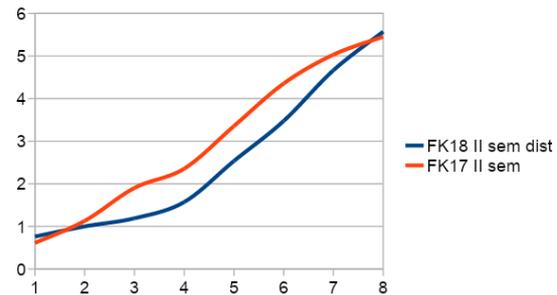


Figure 1: Speed of scoring in the second semester 2020.

For comparison, we used the data of the average student group of the Faculty of Natural Sciences (FK-18), which did not show a sharp decline in attendance due to the transition to distance learning, and the data from the previous year of the group of the relevant specialty (FK-17), which studied entirely in the classroom (the lecturer is the same in both cases).

The OY-axis on the figure 1 shows the scale of an average increase of points per n students of the group (the sum of points for the current t and previous themes divided by the number of n students in the group), themes (t) from 1 to 8 are plotted on the OX-axis. For clarity, the set of points is shown by a solid line.

The comparison of the speed of scoring shows a significant difference in the students' activity in the first month and a half of e-learning (themes 2-4 along the OX-axis). However, later the situation improved due to the fact that students adapted to the conditions and began to complete tasks. Thus, the average number of points gained during the term, by the end of the term was almost equal to the previous year, i.e. the students reached the standard.

Since autumn 2020, the learning of philosophy has been also continuing similarly as e-learning, but due to the fact that students have already been morally and technically prepared for that, there is no corresponding "failure". This can be seen from the comparison of the speed of scoring for the first term by groups FK-19 and FK-18, FK-17 (figure 2). Only the first group out of these three mastered the course of philosophy with extended distance learning support under quarantine in the first term, while in the first term, the rest two groups studied the corresponding course fully in the classroom.

Today, the speed of scoring in the classroom and online does not differ significantly.

In general, the results of the retrospective analysis of the rapid distance learning implementation can be divided into two groups. Firstly, these are subjective

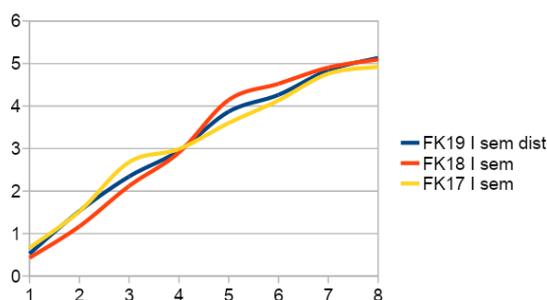


Figure 2: Speed of scoring in the first semester 2021.

impressions, and secondly, they are certain statistical generalizations.

Let us start with subjective impressions. We will not talk about the impressions of the organization of teaching during the quarantine and the efforts required for that. First of all, subjective impressions are about the student performance and quality of learning as well as the students' general attitude to study. Subjectively, the introduction of learning management system for studying philosophy has an interesting effect: the number of students with average points decreases significantly, while the number of students receiving a high score or a low score increases accordingly. Thus, students with good performance begin to study even better, but bad students – even worse.

This impression is illustrated by comparing the results of the exam session by groups of the Faculty of Foreign Languages (figure 3). For comparison, we have chosen all student groups of the admission year 2017–2018 (111 people) who took the philosophy exam in June 2019 and all student groups of the admission year 2018–2019 (70 people) who took the exam in June 2020. The first sample shows the results of the philosophy exam (2019) in groups where the students did not study online and the second one illustrates the results of the same exam (2020) in groups where the students studied philosophy online in the second term and where they had to pass the exam the online. We have considered only the results of the first attempt to pass the exam, and the grades for the resit of the exam are not taken into account.

Percentages are plotted on the OY-axis, and corresponding letter grades are on the-OX axis. It is clear that the percentage of letter grades A, B, C (excellent and good) has increased, but also the percentage of letter grades Fx and F (unsatisfactory) has increased. Simultaneously, there was a corresponding decrease in the percentage of letter grades D and E (satisfactory).

The students, who received a higher-than-expected grade, explain this fact as follows: they received constant access to learning materials, the op-

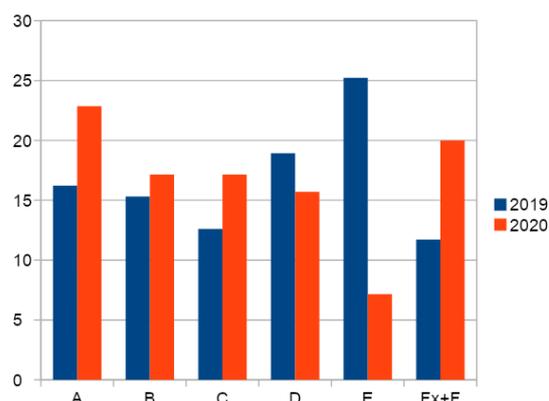


Figure 3: Comparing the results of the exam session by groups of the Faculty of Foreign Languages.

portunity to complete additional activities online, and the ability to score points online for classes they could not attend. Thus, as a rule, students who aspire for a good grade are offered to work with primary sources as additional tasks. This activity means that the lecturer conducts an extra colloquium with students to determine the level of text understanding. During e-learning, the assessment of the primary sources was accomplished using tests. Students noted that this is a convenient way of assessment because the questions fully correspond to the text of the primary source, so after reading the text, one can successfully pass the test. In addition, an unexpected motive for more active work for the students with good performance was the lack of access to grades and the level of preparation of other students. Thus, students noted that awareness of the poor level of preparation of other students usually affects negatively their motivation for better training. Moodle allows students to see only their own grades, so some of the students applying for the scholarship assumed that there were a significant number of students in their group who prepared better than them and, therefore, could get a higher score in the scholarship ranking. Thus, the number of the highest per cent grade (100) in 2019 was 15 out of 330 (4.5%), and in 2020 22 out of 297 (7.4%).

At the same time, the grades of the part of students who are usually classified as “weak E-graders” in many groups have shifted significantly towards Fx grade. It should be noted that the number of “lower” F (0-24 points) has increased significantly. From interviews with students, we have found out that when there is a low motivation to learn, personal contact with the lecturers serves as an additional means of control. The majority of students noted that they needed further explanations on how to use the learning management system and that they considered distance learning as a vacation, but hoped to make up for

a lost time at the end of the term.

Let us consider statistical generalizations. The results of the analysis of a larger sample (table 1) including students from five faculties do not confirm the importance of “subjective impression”. For comparison, we used data from two samples: 2019 (the number of sample elements – 330) and 2020 (the number of sample elements – 297).

Table 1: General characteristics of the statistical sample.

	2019	2020
Number	330	297
Sum	20826	18999
Average	63.1091	63.9697
Mode	50	50
Median	62	63
Dispersion	388.6385	498.1376
Mean deviation	16.4436	18.0229
Asymmetry	0.1281	-0.2849

The column (2019) shows the results of the final control of groups that studied the course of philosophy only in the classroom. The corresponding share of e-learning platform involvement was insignificant; it was used mainly for controlling the studying of the themes required for self-study. These groups took the exam in June 2019.

The column (2020) shows the results of the final control of groups that studied the course of philosophy in the classroom in the first term, but in the second term, they were to transmit to e-learning. Thus, in the second term, the share of the learning management system increased significantly. These groups took the exam in June 2020.

The comparison of the characteristics of the two samples illustrates that the average, the mode and the median of the students’ grades in 2019 and 2020 are almost no different. There is a slight increase in dispersion and, consequently, in the mean deviation, but concerning percent grades (0-100), such values cannot be considered significant. There is a small but noticeable difference in the asymmetry of the two samples. Although the asymmetry of both samples is quite insignificant, in 2019, it was right-skewed, i.e. the values of the grades weighed slightly to the lesser side, while in 2020, the left-skewed asymmetry was obtained, i.e. overall grades increased slightly. We can talk about a slight increase in the extreme values of the sample, but, in general, it is not significant. It can be illustrated by analyzing of learning quality (figure 4).

Percentages are plotted on the OY axis, the sum of excellent and good grades (A + B + C), satisfactory grades (D + E), unsatisfactory grades (Fx + F)



Figure 4: Learning quality.

are plotted on the OX-axis. In general, the learning quality in 2020 increased by 1%. Due to the “slip-page” of E-students’ study results in 2020, learning success decreased by 2% (figure 5).

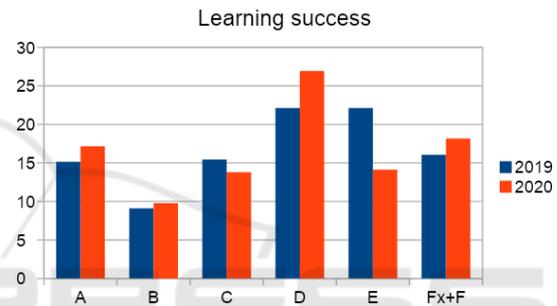


Figure 5: Learning success.

It is also interesting to track fluctuations in the percentage of letter grades. According to individual observations and surveys, it can be assumed that there was a “migration” of “lower” grades: C (good) and E (satisfactory). The percentage of these grades decreased since some students received a higher grade and some a lower one. Thus, the biggest fluctuation occurs in the percentage of the lower satisfactory grade E – 8%. The mode of grade D in 2019 was 65, and in 2020 it is 61. The mode of grade E itself has not changed (50), but the mode of grades Fx + F has increased (from 30 in 2019 to 45 in 2020) even with a simultaneous increase in the percentage of F. Therefore, we can assume that the grade E is partially “dissolved” in the neighbouring D and Fx grades, reducing the mode of the better grade and increasing the mode of the worse one.

Despite the lack of impressive differences and shocking results, we can say that the distance support of the philosophy course with the help of Moodle has successfully fulfilled its function of providing the learning process during the quarantine. Thus, taking into account the specifics of the subject and using the optimal means of organizing learning in Moodle, we can achieve results fully correlating with learning in

the classroom. In our opinion, that indicates that the use of Moodle in teaching philosophy is quite beneficial.

5 CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Trends in modern education are linked, on the one hand, to the desire to develop cultural competences and, on the other, to take into account the informational influence, using its opportunities. The philosophical courses, especially philosophy, are directly meant for the formation of beliefs and convictions, values, systemic and scientific worldview. Therefore, the significant reduction or even the complete exclusion of philosophy from higher education in favour of majors jeopardizes the realization of the stated educational priorities. The creation an e-learning environment will help to simplify and universalize a significant number of types of activities dealt with memorizing information and providing control, so lectures have more time for other activities. First of all, these are activities directly related to communication, which is an integral part of the philosophy training. Moodle can be used as a tool of the online support of the philosophy course, but it is not possible to transfer a full amount of discipline into the virtual space, as this course has a considerable ideological load. This is due to the dialogic, discursive, communicative and pluralistic nature of philosophy. However, taking into account the peculiarities of the discipline, it is possible to provide not only the evaluative function of test control, but also to realize a number of educational functions: the updating of basic knowledge, memorization, activation of cognitive interest, the development of ability to reason and more simple, but not less important, – the skill to familiarize oneself with information.

We should note that the use of e-learning environment on the one hand imposes certain restrictions on the educators and creates a risk of “mechanical” passage of the course by the students. At the same time, it encourages the teacher to develop new and rethink existing forms of learning in order to fully implement them in e-learning support systems (Hamaniuk et al., 2020).

The peculiarities of the use of Moodle as a tool in the philosophy teaching can be extended to other courses, not just the humanities. They open the prospect of using test tools not only as a control but also as an effective learning tool. Moodle tools such

as essays and seminars are promising to assess the level of idea formation, the ability to express and reason students’ own opinions, but they also have their own implementation specifics, which we will highlight in future research.

REFERENCES

- Abdula, A., Baluta, H., Kozachenko, N., and Kassim, D. (2020). Peculiarities of using of the Moodle test tools in philosophy teaching. *CEUR Workshop Proceedings*, 2643:306–320.
- Akulenko, K. (2012). Vprovadzhennia idei sotsialnoho konstruksionizmu v pidhotovku studentiv-ekonomistiv zasobamy systemy Moodle (implementation of the ideas of social constructivism in the training of students-economists by tools of the system Moodle). *Visnyk Luhanskoho natsionalnoho universytetu imeni Tarasa Shevchenka. Pedahohichni nauky*, (22 (9)):93–99.
- Aristovnik, A., Keržič, D., Ravšelj, D., Tomaževič, N., and Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability*, 12(20):8438.
- Astafieva, M., Zhylytsov, O., Proshkin, V., and Lytvyn, O. (2020). E-learning as a mean of forming students’ mathematical competence in a research-oriented educational process. *CEUR Workshop Proceedings*, 2643:674–689.
- Avdieiev, O. (2015). Vykorystannia dystantsiinoi systemy Moodle dlia optymizatsii navchalnoho protsesu u vyshchii shkoli (Use the Moodle distance system to optimize the learning process in high school). *Medychna osvita*, (1):6–8.
- Badiou, A. (2020). Sur la situation épidémique. *Tracts de Crise*, (20).
- Biletska, H. A. (2013). Vykorystannia MOODLE u pidhotovtsi studentiv-ekolohiv za dennoi formoiu navchannia (using MOODLE in preparing students-environmentalists for full-time study). *Onovlennia zmistu, form ta metodiv navchannia i vykhovannia v zakladakh osvity*, (7):11–15.
- Bondarenko, O., Mantulenko, S., and Pikilnyak, A. (2018). Google Classroom as a tool of support of blended learning for geography students. *CEUR Workshop Proceedings*, 2257:182–191.
- Crawford, A., Saul, W., and Mathews, S. R. (2005). *Teaching and learning strategies for the thinking classroom*. IDEA.
- Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., Magni, P., and Lam, S. (2020). COVID-19: 20 countries’ higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3(1):1–20.
- Dewey, J. (1904). *Humanism*. The Macmillan Company.
- Dolynskiy, Y. V. (2013). Mozhyvosti vykorystannia navchalnoho seredovyscha Moodle pry vyvchenni inozemnoi mov ta perekladu (opportunities to use the

- Moodle learning environment in learning foreign languages and translation). *Zbirnyk naukovykh prats Khmelnytskoho instytutu sotsialnykh tekhnolohii Universytetu Ukraina*, (1):82–85.
- Giddens, A. (1990). *The Consequences of Modernity*. Stanford University Press. <https://voidnetwork.gr/wp-content/uploads/2016/10/The-Consequences-of-Modernity-by-Anthony-Giddens.pdf>.
- Halpern, D. F. (2014). *Critical thinking across the curriculum: A brief edition of thought & knowledge*. Routledge.
- Hamaniuk, V., Semerikov, S., and Shramko, Y. (2020). ICHTML 2020 - How learning technology wins coronavirus. *SHS Web of Conferences*, 75:00001.
- Hintikka, J. (2007). *Socratic epistemology: Explorations of knowledge-seeking by questioning*. Cambridge University Press.
- Holotescu, C., Grosseck, G., CREȚU, V., and Naaji, A. (2014). Integrating MOOCs in blended courses. In *The 10th International Scientific Conference eLearning and software for Education Bucharest, April 24-25, 2014*.
- Horshkova, H. A. (2015). Vykorystannia systemy Moodle u vyvchenni vyshchoi matematyky maibutnimy inzheneramy-metalurhamy (Use of the Moodle system in the study of higher mathematics by future metallurgical engineers). *Naukovi zapysky Berdianskoho derzhavnoho pedahohichnoho universytetu. Pedahohichni nauky*, (3):81–86.
- Karapetian, A. O. (2020). Creating ESP-based language learning environment to foster critical thinking capabilities in students' papers. *European Journal of Educational Research*, 9(2):717–728.
- Keegan, D. (1980). On defining distance education. *Distance Education*, 1(1):13–36.
- Kopotun, I. M., Durdynets, M. Y., Teremtsova, N. V., Markina, L. L., and Prisyakova, L. M. (2020). The use of smart technologies in the professional training of students of the Law Departments for the development of their critical thinking. *International Journal of Learning, Teaching and Educational Research*, 19(3).
- Lakhuti, D. G. (2014). Filosofskie issledovaniya i obshee obrazovanie (Philosophical studies and general education). *Voprosy filosofii*, (4):84–89.
- Lavrentieva, O., Rybalko, L., Tsys, O., and Uchitel, A. (2019). Theoretical and methodical aspects of the organization of students' independent study activities together with the use of ICT and tools. *CEUR Workshop Proceedings*, 2433:102–125.
- Lipman, M. (2012). *Thinking in education*. Cambridge University Press, 2nd edition.
- Lisnani, L., Putri, R. I. I., Zulkardi, and Somakim (2020). Designing Moodle features as e-learning for learning mathematics in COVID-19 pandemic. *Journal of Physics: Conference Series*, 1657:012024. <https://doi.org/10.1088/1742-6596/1657/1/012024>.
- Mintii, I. (2020). Using Learning Content Management System Moodle in Kryvyi Rih State Pedagogical University educational process. *CEUR Workshop Proceedings*, 2643:293–305.
- Myshchysheh, A. V. (2011). Moodle yak systema dystantsiinoho upravlinnia navchanniam pry pidvyshchenni kvalifikatsii (Moodle as a distance learning management system for upgrading qualifications). *Visnyk pisladyplomnoi osvity*, (5):96–105.
- Nedilko, S. M., Chumak, O. O., and Plachynda, T. S. (2017). Navchalna platforma Moodle yak zaporuka yakisnoi profesiinoi pidhotovky maibutnikh fakhivtsiv (training platform Moodle as a guarantee of high-quality professional training of future specialists). *Pedahohichniy almanakh*, (36):116–121.
- Open University (2021). About the Open University. <https://www.open.ac.uk/about/main/>.
- Oproiu, G. C. (2015). A study about using e-learning platform (Moodle) in university teaching process. *Procedia-Social and Behavioral Sciences*, 180:426–432.
- Oyedotun, T. D. (2020). Sudden change of pedagogy in education driven by COVID-19: Perspectives and evaluation from a developing country. *Research in Globalization*, 2:100029.
- Palmer, A. (2018). Meet the robo-professor: Creepy life-like AI Bina48 teaches a philosophy course at West Point military academy. <https://www.dailymail.co.uk/sciencetech/article-6291261/Meet-roboprofessor-Bina48-teaches-philosophy-course-West-Point-military-academy.html>.
- Petrenko, S. V. (2017). Optimization and analysis of the results of using LMS Moodle in the mixed learning system in university. *Information Technologies and Learning Tools*, 61(5):140–150.
- Pienkin, Y. M. and Yatsenko, N. M. (2014). Osoblyvosti orhanizatsii navchalnoho protsesu studentiv dystantsiinoi formy navchannia v systemi Moodle (Features of the organization of the educational process of students of distance learning in the system Moodle). *Aktualni pytannia farmatsevtichnoi i medychnoi nauky ta praktyky*, (1):105–108.
- Polhun, K., Kramarenko, T., Maloivan, M., and Tomilina, A. (2021). Shift from blended learning to distance one during the lockdown period using Moodle: test control of students' academic achievement and analysis of its results. *Journal of Physics: Conference Series*, 1840(1):012053.
- Quitadamo, I. J. and Kurtz, M. J. (2007). Learning to improve: using writing to increase critical thinking performance in general education biology. *CBE—Life Sciences Education*, 6(2):140–154.
- Raza, S. A., Qazi, W., Khan, K. A., and Salam, J. (2021). Social isolation and acceptance of the learning management system (LMS) in the time of COVID-19 pandemic: an expansion of the UTAUT model. *Journal of Educational Computing Research*, 59(2):183–208.
- Reid, J. R. and Anderson, P. R. (2012). Critical thinking in the business classroom. *Journal of Education for Business*, 87(1):52–59.
- Sanchez-Ruiz, M.-J., Pérez-González, J. C., Romo, M., and Matthews, G. (2015). Divergent thinking and stress dimensions. *Thinking Skills and Creativity*, 17:102–116.

- Semenets, A. V. (2017). Pro nalahodzhennia SDO Moodle dlia provedennia testovoho otsiniuvannia z kursu "Vyshcha matematyka" (about the establishment of SDE Moodle for conducting the test evaluation from the course "Higher mathematics"). *Medychna osvita*, (1):112–117.
- Shalatska, H., Zotova-Sadylo, O., and Muzyka, I. (2020). Moodle course in teaching English language for specific purposes for masters in mechanical engineering. *CEUR Workshop Proceedings*, 2643:416–434.
- Shokaliuk, S., Bohunenko, Y., Lovianova, I., and Shyshkina, M. (2020). Technologies of distance learning for programming basics on the principles of integrated development of key competences. *CEUR Workshop Proceedings*, 2643:548–562.
- Shunevich, B. (2011). Porivnialnii analiz rannikh zarubizhnykh teorii dystantsiinogo navchannia. *Visnyk Dnipropetrovskogo universytetu imeni Alfreda Nobelia. Serii: Pedagogika i psykholohia*, 2(2):105–108.
- Syvyi, M., Mazbayev, O., Varakuta, O., Panteleeva, N., and Bondarenko, O. (2020). Distance learning as innovation technology of school geographical education. *CEUR Workshop Proceedings*, 2731:369–382.
- Teplotytskyi, O. I., Teplotytskyi, I. O., Semerikov, S. O., and Soloviev, V. N. (2015). Training future teachers in natural sciences and mathematics by means of computer simulation: a social constructivist approach. *Theory and methods of learning fundamental disciplines in high school*, 10(1).
- Terno, S. (2012). *Metodyky rozvytku krytychnoho myslennia shkoliariv u protsesi navchannia istorii (Methods of development of critical thinking of students in the process of teaching history)*. Zaporizkyi natsionalnyi universytet, Zaporizhzhya.
- Triakina, O., Pavlenko, O., Volkova, N., and Kassim, D. (2018). Usage of e-learning tools in self-education of government officers involved in global trade activities. *CEUR Workshop Proceedings*, 2257:173–181.
- Ustinova, V., Shokaliuk, S., Mintii, I., and Pikilnyak, A. (2019). Modern techniques of organizing computer support for future teachers' independent work in German language. *CEUR Workshop Proceedings*, 2433:308–321.
- Verkhovna Rada of Ukraine (2017). Zakon Ukrainy "Pro osvitu" (Law of Ukraine "On Education"). <https://zakon.rada.gov.ua/laws/show/2145-19>.
- Vlasenko, K., Chumak, O., Achkan, V., Lovianova, I., and Kondratyeva, O. (2020). Personal e-learning environment of a mathematics teacher. *Universal Journal of Educational Research*, 8(8):3527–3535.
- World Bank (2020). How countries are using EdTech (including online learning, radio, television, texting) to support access to remote learning during the COVID-19 pandemic. <https://tinyurl.com/x8whyeds>.
- Zhelezniakova, E. and Zmiivska, I. (2016). Upravlinnia samostiinoiu robotoiu studentiv u systemi MOODLE (management of independent work of students in the system MOODLE). *Pedahohichni nauky: teoriia, istoriia, innovatsiini tekhnolohii*, (6):30–43.