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INTEGRATED LEARNING IN A MODERN SCHOOL IN THE CONTEXT OF DISTANCE EDUCATION

Oksana Horbatiuk
Kamianets-Podilskyi Ivan Ohiienko National University, Ukraine

Svitlana Polishchuk
Kamianets-Podilskyi Ivan Ohiienko National University, Ukraine

Iryna Kuchynska
Kamianets-Podilskyi Ivan Ohiienko National University, Ukraine

Olena Blashkova
Mariupol State University, Ukraine

Abstract. *The article is aimed at defining the concept of integrated learning and features of the implementation of this educational technology in modern general education institutions. In defining the key concept, the mechanisms of integration between the basic disciplines, which are appropriate for the use of integrated learning in the modern school, are considered. It is noted that integration can be carried out by two key mechanisms, each of which is aimed at the perception of pupils of the surrounding world as a whole, regardless of which aspect of science is its knowledge.*

The article reveals the essence of the integrated approach to education, its significance and impact on changing the structure of a particular subject, which is an important element in improving the effectiveness of the educational process. In addition, the article describes in detail the action of mechanisms in the implementation of the basics of an integrated lesson, as well as the content and operation of didactic principles for implementing an integrated approach.

The main research methods are: Analysis of literature sources, observation, survey, generalization and statistical analysis.

The article focuses on identifying opportunities for introducing distance learning into Ukrainian education using an integrative approach.

The main results of the study give grounds for asserting that the active and professional use of distance education opportunities by teachers will contribute to solving the educational problems that have arisen in modern Ukraine. These changes will help build new ways of development and prospects for Ukrainian educators, based on the relevance and widespread use of online education.

The authors proposed their own definitions of the concepts "value orientations", "personal values", "value orientations of Ukrainian youth".

Keywords: *distance education, integrated learning, integration, interdisciplinary connections, modern school, online learning.*

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Introduction

The 21 century is an age of active transformation, in which it is said that learning can be effective only if the educational process is as close to reality as possible, and the lesson is a part of reality that cannot exist on its own. Integration, that is, the process of bringing different subjects together and combining them, is one of the most effective ways to update the content and teaching methods of a modern school.

The state National Program "Education" (Cabinet of Ministers of Ukraine, 1993) formulated the following tasks: selection and structuring of educational material on the basis of differentiation and integration, providing alternative opportunities for education in accordance with individual needs and abilities; orientation to integrated courses, search for new approaches to structuring knowledge as a means of holistic understanding and knowledge of the world.

According to the new state standard of primary education (Cabinet of Ministers of Ukraine, 2018), integration is the main form of organizing the education of Primary School pupils.

So, the relevance of integrated learning in the conditions of distance education is due to the need to reformat traditional approaches to learning and form a holistic picture of the world among pupils, creating conditions for the formation of a child – an education applicant as an integral, comprehensively developed person.

This idea is not new in elementary school practice. Using it for the first time, K. D. Ushynskyi (1983) imagined how two types of skills are simultaneously formed in the literacy course: reading and writing. Integrated reading and writing lessons are still relevant for Primary School students today. But integration elements should be used in teaching absolutely all basic disciplines, in particular, when studying mathematics in primary school, children learn elements of arithmetic, algebra and geometry. While studying the natural science course, children get acquainted with the elements of chemistry, biology, geography, physics, and in art lessons they not only learn about the world of beauty, but also get acquainted with the historical background of the emergence of this beauty.

This gives us reason to argue that integrated lessons:

- increase motivation to learn;
- form students ' research interest;
- develop speech, ability to compare (analyze), generalize and draw conclusions;
- contribute to the formation of a comprehensively, harmoniously and intellectually developed personality.

When it comes to secondary and high schools, the priority direction of the NUS defines specialized training, which is based on the active implementation of integration mechanisms of educational activities in the educational process.

The purpose of the article is to highlight the essence of the concept of "integrated learning", to outline the features of implementing integrated learning in a modern school in the context of distance education.

The main research methods are: Analysis of literature sources, observation, survey, generalization and statistical analysis.

The theoretical background

The first historical riddles about integration in the study, dated 1855 in the United States. Today, the idea of integrating the content and forms of teaching attracts many practical teachers. The main provisions of the theory of intersubject relations in the integral learning process.

A number of scientific works by Baranovska O. (2018), Bulhakova N. (2009), Fedorenko V. (2009), Ivaniuk I. (2012), Kokhanko O. (2020), Kremen V. (2008), Mala I. (2022) have been devoted to the study of the possibility of distance learning in Ukraine.

Distance education in Ukraine was introduced gradually, but it gained practical use by teachers during the Covid-19 pandemic and after the start of a large-scale war on 24.02.2022. As Capone R., Lepore M. said: “Distance Learning at the time of COVID-19 is an educational methodology and it can be considered the only occasion to keep an educational connection between students and teachers” (Capone & Lepore, 2022).

It is worth noting that integrated learning using online learning occupies a significant place among teachers in Ukraine. After all, combining the possibilities of integrated distance learning contributes to the effective training of applicants for the education of any level. Gradual mastery of information capabilities during online training helps Ukrainian teachers and applicants to learn even though there is a war in the country.

At the present stage of formation and development of a new Ukrainian school, the problem of integrated education is studied in various aspects. In particular, Baranovskaya O. (2015), Zasekina (2000), Kronivets T. (2013), Kremen V. (2008), and others described a number of problems that they identified in the course of Secondary Education. Baranovskaya O. (2013, 2015), who are part of the Department of didactics of the Institute of Pedagogy of the National Academy of Sciences of Ukraine, speak about the need for training in the context of fundamentalization, technologization, integration of educational content (Baranovskaya O. (2015), Vaskivska H. (2013), Vaskivska H. (2015). Bolshakova (2014), Ivaniuk I. (2012) talk about thorough training of teachers who introduce elements of integrated learning into the educational process (Kokhanko, 2020*)*.

Presentation of the main material

An integrative approach to education is an approach that leads to the integration of the content of education, that is, the correct unification of its elements into a whole (Kremen, 2008)*;* it is a way to build the educational content in such a way that it obeys the solution of a system of internal and intrasubject problems (Bulhakova, 2009)*;* it causes a change in the structure of a particular subject or a separate industry with the presentation of a new didactic model, which is based on a thorough combination of elements of different academic disciplines using integrated approaches to the organization of the educational process (Opachko, 2006).

This method of conducting a lesson is of interest not only to pupils but also to teachers. This is explained by the fact that by modelling cooperation and combining different disciplines, teachers thereby create not only a new educational meaning, look for new non-standard forms of combining material, but also improve their interaction and professional skills of the educational institution. This, in turn, contributes to the growth of its image and increases the competitiveness and market of educational services.

In other words, we can state that integration not only contributes to the development of pupils' worldviews and critical thinking but also establishes communication, cooperation and interaction between teachers (teachers).

The emergence of integration is the result of a high level of implementation of intersubject links, which imply not only the existence of a connection between branches of knowledge, but also the establishment of a deep connection between them. Integration is based on Knowledge Common to several specific scientific fields that allow us to comprehensively form a general idea of a person as a part of the surrounding world (Klymenko, 2017).

The purpose of integrated learning is:

- formation of a holistic view of the world around education applicants;
- bringing the Ukrainian education system to a qualitatively new competitive level;
- creating optimal conditions for the general, physical and mental development of the child with the formation of critical, logical and analytical thinking skills during the comprehensive study of academic disciplines in separate blocks;
- activation and development of cognitive activity and cognitive activity in educational applicants;
- effective implementation of the basics of educational work in the process of obtaining basic general education by schoolchildren (Ministry of Education and Science of Ukraine, 2020).

Despite the fact that the introduction of distance learning involves a certain level of qualification of teachers, V. Kukharenko and V. Bondarenko emphasize

that the creation of a distance course begins with planning, because it is necessary to clearly define the method of conducting distance learning:

- whether meetings are planned in real time (explanations of the material, answers to questions);
- distance learning is planned through interactive learning materials (videos, interactive videos, text, drawings) (Kukharenko & Bondarenko 2020).

This approach to the implementation of the learning process indicates its prospects, since it maximally contributes to the application of the acquired theoretical knowledge to their practical implementation.

I. Ivanyuk, studying the conceptual and terminological apparatus on the development of distance education, carried out a thorough analysis of this issue. The author noted that distance education in Ukraine has gone from education in the form of correspondence, using primarily printed materials, to the global movement of using the latest computer and media technologies (Ivanyuk, 2012).

According to I. Ivanyuk, the terminology regarding the interpretation of the concept of "distance education" is constantly being improved. Recent definitions include new interactive technologies, stress education that occurs at the same time, but in different places (Ivanyuk, 2012).

The integrative approach to school education gained popularity at the end of the twentieth century, primarily as a factor in changing the structure of the content of Education. Integrated programs with varying degrees of integration were actively developed: complex ones that combine several subjects, keeping them separate; fully integrated ones that form a new subject and differ in the degree and type of integration.

Along with the development of integrated learning, as noted by S. Koleboshin, V. Koleboshin, E. Ignatenko (2022), electronic learning tools related to the spread of information and communication technologies and the Internet in the world are also being rapidly introduced into the educational process of Ukraine. Teachers of various educational institutions create websites of classes and schools, courses, groups, which contain the necessary information of educational content (homework, links to additional sources for deepening the study of the subject content, the screen of academic performance of applicants). More often, e-mail and social networks are used to conduct intellectual scientific competitions and provide individual and group consultations, communication and training.

Interactive smart boards are actively used, because teachers have the opportunity not only to save the lesson content on electronic media, but also to make the lesson more vivid (Koleboshin, Koleboshin, & Ignatenko, 2022).

In Ukraine, these processes were carried out more intensively not only in primary schools, where not only integrated courses of purely scientific content

were developed, but also civil and social components were combined, in such subjects as "I and Ukraine", "environment", "Man and the world".

When implementing the basics of integrated education in the context of distance education in middle and high schools, integration is carried out according to two mechanisms:

- development and implementation of integrated courses in the educational process, which are based on organic interaction between different academic subjects and allow avoiding fragmentation when pupils receive information about a particular object. Integrated courses taught in middle and high schools include: "fundamentals of Health", "Natural Science", "Art";
- due to the use of educational material by the teacher in the classroom, which concerns not only the discipline being studied, but also other related branches of science.

According to V. Fedorenko, "varieties of the second type of intersubject integration differ in the intensity of use of material that is attracted from other subjects, and, in a generalized state, can be combined between two large groups" (Fedorenko, 2009). The first group of integrated lessons includes lessons that reflect cross-subject integration through the use of evidence from other areas. The second group defines integrated lessons, the main features of which are a clear definition of goals and the possibility of integrating educational content or methods of cognitive activity of pupils, scientific motivation for choosing didactic material to be integrated, determining a clear structure of the lesson, with a balanced approach to the introduction of individual elements of different industries in such a way that the perception of integrated educational material takes place holistically (Bolshakova, 2014).

The reform of modern education, as our research shows, lies on the way to overcoming the isolated teaching of academic subjects (in the domestic school) and creating fundamentally new curricula, where it is advisable to focus the educational process on a developing and productive integrative approach.

At the same time, we must remember that the implementation of integrated training in the context of distance education requires certain conditions to be met. Such conditions, of course, are:

- the objects of research are the same or quite close (then we study the object from different angles, using educational material from different disciplines);
- academic subjects use the same or similar methods of studying objects and phenomena (then we demonstrate a way to know reality using examples from different subjects);
- what is learned obeys the general laws that are studied in the lesson (that is, we generalize educational material from different academic disciplines and learn a more complex system) (Zasekina, 2020).

This approach to the introduction of integration into the educational process of the school in the context of distance education gives us grounds to assert that the integration of educational material in various academic subjects occurs, as a rule, either around a certain object or environmental phenomenon, or to solve a problem of an intersubject nature, or to create a creative product.

After meeting certain conditions associated with the introduction of integrated learning in the context of distance education, there is a direct process of implementing intersubject integration of the content of training, which includes a number of stages (from simple to complex), namely:

- introduction of intersubject connections in the lessons of related disciplines based on reproductive activity and elements of problem solving;
- setting intersubject educational problems and independently searching for their solution in separate lessons;
- systematic problem-based learning based on complicated intersubject problems within individual courses;
- inclusion of first bilateral and then multilateral links between different subjects based on coordination of the teacher's activities;
- development of a broad system in the work of teachers who carry out intersubject relations both in the content and methods, and in the forms of organizing training, including extracurricular work and expanding the boundaries of the program (Zasekina, 2020).

This gives us grounds to conclude that it is through multilateral intersubject relations that the foundation is laid for the formation of pupils' skills of a comprehensive vision, problems of real reality, and diverse approaches to their solution.

In addition to the above, you should pay attention to the fact that the implementation of integrated teaching methods in the context of distance education is based on compliance with certain principles.

The didactic principles of implementing an integrative approach include:

- design of integrated learning outcomes that cause conceptual changes in the purpose, structure and content of training, assessment methods, learning tools and technologies;
- designing the structure and content of school education as a continuous and integral education, which includes the development of an integral thematic structure of Sciences in accordance with certain cross-cutting topics, general subjects of study, coordination of the conceptual apparatus and mechanisms for the formation of basic knowledge and skills;
- formation of holistic knowledge about nature, technologies and technical means, acquisition of scientific research skills, value attitude to nature

> and responsible actions in relation to it by selecting appropriate educational tools and technologies, development of proposals for pedagogical and methodological, methodological support for the professional activity of teachers (Zasekina, 2020).

In other words, we can say that the integrated approach plays an important role in improving the educational process, since it directly contributes to the combination of various forms and means of learning. Its advantage lies in the fact that, translating their theoretical achievements into practical application, pupils develop the process of thinking, expand their horizons, increase the level of their intersubject competence, the essence of which is the pupil's ability to apply to an intersubject range of problems: knowledge, skills, skills, methods of activity and attitudes that belong to a certain range of academic subjects and subject areas.

This gives us reason to say that the success of implementing integrated learning in the educational process largely depends on the introduction of distance education. Distance learning itself, as noted by I. Mala, provides educational applicants with access to non - traditional sources of information, increases the effectiveness of independent work, gives a new level of opportunities for creative expression, finding and consolidating new knowledge and skills; distance education-allows teachers to implement completely new forms and educational methods using conceptual and mathematical modeling of phenomena and processes. The evolution of distance learning will continue and improve with the development of internet technologies and the improvement of distance learning methods (Mala, 2022).

Also, as T. Kronivets notes, important first steps in the development of regulatory and legal regulation for the introduction of distance technologies in the educational process of higher educational institutions of Ukraine have already been taken. Over the years of using distance learning technologies, scientific, methodological, human and production potential, information resources and technologies have been accumulated, and there is a telecommunications infrastructure. The legal certainty of the distance education system is a step towards building an information society in Ukraine, our state's entry into the global educational space (Kronivets, 2013).

All types of educational activities can be combined in the distance learning system (LMS), which allows you to organize a full-fledged distance learning process.

In order to identify the effectiveness of integrated learning in the context of distance education, we conducted a survey among pupils regarding the effectiveness of the proposed Padlet online tool. The survey was conducted on the basis of a technology adoption model that allows us to determine subjective utility and subjective ease of Use (Nagy, 2018). This performance evaluation model is based on the concept that when using technology, it is important not only its effectiveness as a technical tool, but also its "clarity" to the user.

Pupils had to indicate their attitude to the statements made using the psychometric Likert scale: completely disagree; disagree; difficult to answer; agree; completely agree.

Statement on the definition of subjective utility:

1) using a virtual wall (VW) allows you to quickly present the results of your activities.
2) using VW increases the productivity of my work.
3) using VW makes my training more efficient.
4) the use of VW expands the possibilities of communication with the teacher and classmates.
5) using the VW allows you to objectively evaluate your own work and the work of others.
6) using VW is useful in training. The survey results can be viewed in Figure 1.

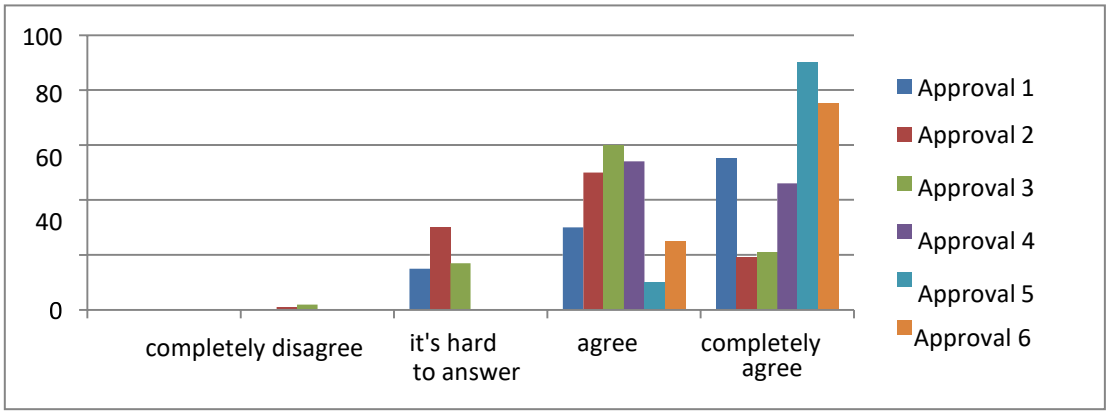

Figure 1 ***Results of pupil' responses to the definition of subjective utility***
(made by authors)

As you can see, individual utility questions were not entirely clear to pupils, so they chose the answer "difficult to answer". In general, everyone noted that the online tool can be useful in educational activities and simplifies the organization of the educational process.

Statement on the definition of subjective simplicity:

1) using VW is very easy.
2) it is very easy to present the results of your work using the VW tools.
3) the use of VW is clear and not complicated.
4) sun can be very easily integrated into the learning process.
5) I easily learned how to use all the functions.
6) VW is easy to use for anyone.

The survey results can be viewed in Figure 2.

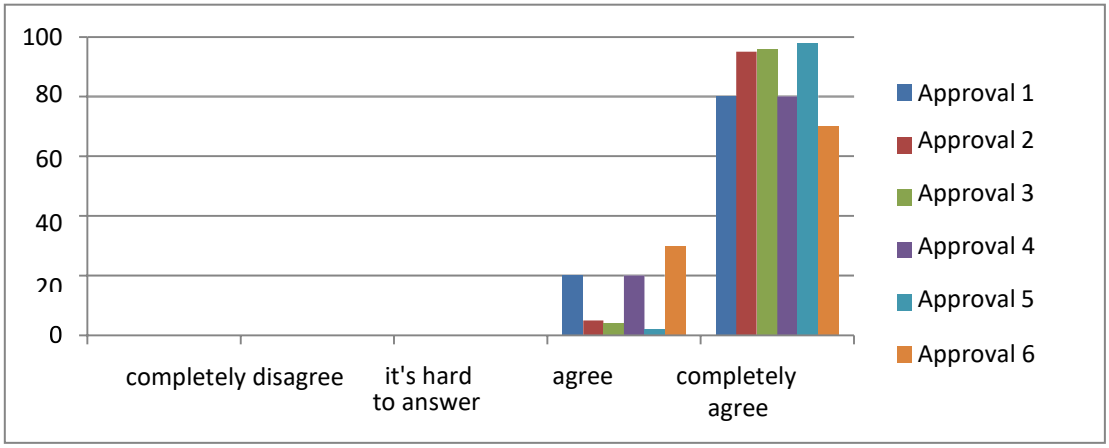

Figure 2 ***Results of pupil' responses to the definition of subjective simplicity*** *(made by authors)*

As you can see, the results of the definition of subjective simplicity show that using a virtual wall is extremely simple, all the functions presented in the environment are clear, the virtual wall is not burdened with a large number of settings, so it is perceived by students easily and does not require additional skills.

Conclusions

Conclusions integrated learning is learning that is based on the use of common components of individual Sciences holistically, which allows the applicant to form a holistic perception of the world around them. In a modern Ukrainian school, the integration of educational material is carried out by two mechanisms:

- when teaching integrated courses;
- through the use of reliable facts from one scientific field during the teaching of an academic discipline that has direct or indirect links with it, for example, the use of elements of physics during the teaching of biology, geography, chemistry lessons; the use of quotations from literary works in Ukrainian language lessons, etc.

Taking into account the transformation processes that determine the construction of a new Ukrainian school based on the principles of integrated education, it is worth noting that integrated courses have become more widespread in primary schools than in middle and high schools, but with the continuation of transformation processes, the integration approach will delve deeper into the educational sector.

The selection of online funds should be carried out in accordance with the purpose of their use and the organization of appropriate forms of activity. It is convenient to use the distance learning system as the main means of organizing the educational process, however, it is necessary to provide for the use of online

tools for performing other forms of educational activities. Thus, the use of online tools allows you to get wide opportunities for organizing training, carry out new interesting types of activities, control and communication that contribute to overcoming the "digital gap" between participants in the educational process.

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