INTERDISCIPLINARY APPROACH TO THE DEVELOPMENT OF SOFT SKILLS IN THE EDUCATIONAL PROCESS: INTEGRATION OF KNOWLEDGE AND SKILLS

ABORDAGEM INTERDISCIPLINAR DO DESENVOLVIMENTO DE COMPETÊNCIAS TRANSVERSAIS NO PROCESSO EDUCATIVO: INTEGRAÇÃO DE CONHECIMENTOS E COMPETÊNCIAS

Lesia Mandro
ORCID 0000-0002-5417-9419

Department of Primary Education
Faculty of Pedagogy
Vasyl Stefanyk Precarpathian National University
Ivano-Frankivsk, Ukraine
kydla.lesia@gmail.com

Hanna Lykhodieieva
ORCID 0000-0002-2065-0217

Department of Higher Mathematics
Mathematical Modeling and Physics, Educational and Scientific Institute of Information Technologies
State University of Information and Communication Technology
Kyiv, Ukraine
annvl@ukr.net

Olesia Tovstukha
ORCID 0000-0001-7998-1208

Department of Psychology
Educational and Research Institute of Pedagogy and Psychology
Luhansk Taras Shevchenko National University
Poltava, Ukraine
aleksa.lnu@gmail.com

Svitlana Borysova
ORCID 0000-0003-0610-644X

Department of Design, Educational and Research Institute of Arts
State Institution "Luhansk Taras Shevchenko National University"
Poltava, Ukraine
Department of Computer Technologies
Faculty of Engineering Education
Ternopil Volodymyr Hnatiuk National Pedagogical University
Ternopil, Ukraine
svitlana.borysowa@gmail.com

Mariia Zapotichna
ORCID 0000-0002-9127-9240

Department of Foreign Languages
Lviv Polytechnic National University
Lviv, Ukraine
zapotichnam@gmail.com

Abstract. The development of soft skills is important for the formation of a modern specialist, which makes the teaching of these skills relevant in the course of education. The purpose of the article is to study an interdisciplinary approach to the development of Soft Skills in the educational process through the prism of the study of the integration of knowledge and skills. To achieve this goal, it is proposed to use the methods of content analysis of scientific literature. The scientometric databases Google Scholar, Scopus and Web of Science were used to prepare the article. The search covered the period from 2016 to 2023, without regional restrictions. The choice of sources was based on their relevance to the consideration of an interdisciplinary approach and the integration of knowledge and skills in the educational process. The results indicate that the integration of knowledge and skills within an interdisciplinary approach emphasises the uniqueness of educational scenarios and contributes to broadening students' perspectives by developing a comprehensive approach to solving problems and challenges. The interdisciplinary approach to the development of Soft Skills emphasises the importance of cooperation between specialists from different fields, creating a learning environment that actively develops not only theoretical knowledge but also the skills necessary for success in various spheres of life and professional activity. In the context of the digital transformation of learning and soft skills development, the use of an interdisciplinary approach and the integration of structural and logical links, including educational platforms and participation in research and creative initiatives, is appropriate. The conclusions recommend supplementing study programmes with information about online courses, considering digital educational platforms.

Keywords: Soft skills; education; transformation; digitalisation; project method; interdisciplinary approach.

Resumo. O desenvolvimento de competências transversais é importante para a formação de um especialista moderno, o que torna o ensino destas competências relevante no decurso da educação. O objetivo do artigo é estudar uma abordagem interdisciplinar do desenvolvimento das Soft Skills no processo educativo através do prisma do estudo da integração de conhecimentos e competências. Para atingir este objetivo, propõe-se a utilização dos métodos de análise de conteúdo da literatura científica. Para a elaboração do artigo foram utilizadas as bases de dados cientométricas Google Scholar, Scopus e Web of Science. A busca abrangeu o período de 2016 a 2023, sem restrições regionais. A escolha das fontes foi baseada em sua relevância para a consideração de uma abordagem interdisciplinar e a integração de conhecimentos e habilidades no processo educacional. Os resultados indicam que a integração de conhecimentos e habilidades dentro de uma abordagem interdisciplinar enfatiza a singularidade dos cenários educacionais e contribui para ampliar as perspectivas dos alunos, desenvolvendo uma abordagem abrangente para a resolução de problemas e desafios. A abordagem interdisciplinar ao desenvolvimento de competências transversais realça a importância da cooperação entre especialistas de diferentes áreas, criando um ambiente de aprendizagem que desenvolve ativamente não só o conhecimento teórico, mas também as competências necessárias para o sucesso em várias esferas da vida e da atividade profissional. No contexto da transformação digital da aprendizagem e do desenvolvimento de competências transversais, é adequada a utilização de uma abordagem interdisciplinar e a integração de ligações estruturais e lógicas, incluindo plataformas educativas e a participação em iniciativas criativas e de investigação. As conclusões recomendam que se completem os programas de estudo com informação sobre cursos em linha, tendo em conta as plataformas educativas digitais.

Palavras-chave: competências transversais; educação; transformação; digitalização; método de projeto; abordagem interdisciplinar.

1. INTRODUCTION

In today's educational context, defined by the rapid pace of technological change and global challenges, the emphasis on the development of soft skills is becoming more urgent. The concept of "Soft Skills" includes a wide range of personal, social, and communication skills, such as leadership, communication, creativity, analytical, and problem-solving (Dobrovolska, Moroz, Shpak, Tsekhmister, & Vovchenko, 2021). Given the target orientation of education to form the readiness of graduates for the challenges of the modern labour market, the need to study and develop Soft Skills is of particular importance.

1.1. Research problem

The research problem of this article is the need to study and improve approaches to the development of soft skills in the educational process through the prism of an interdisciplinary approach. The main challenges that become the object of research also include the study of the reasons for the lack of integration of soft skills into curricula. In particular, many modern curricula focus mainly on the transfer of theoretical knowledge, leaving the development of soft skills unaddressed. In order to keep up good relations, facilitate efficient communication, and adjust to the new demands of varied and collaborative situations, soft skills are crucial.

The importance of soft skills in a variety of social contexts, including schooling, has been extensively discussed by researchers. According to Scheerens, Van der Werf, and De Boer (2020), the development of socio-emotional abilities within the emotional trend is outlined in the educational system. By examining new opportunities, Saienko, Kurysh, and Siliutina (2022) investigated how digital competence is formed. Similar topics have been studied by other academics as well (Ostanina et al., 2023; Koniari & Raftoulis, 2023). Thus, the significance of learning in authentic or contextual settings where students may apply the knowledge and skills they have acquired to particular activities or circumstances is emphasized by contextual learning within an interdisciplinary framework (Avby, 2022). However, modern researchers have mainly characterized the theoretical basis of studying soft skills, however, through the prism of an interdisciplinary approach, this topic has not been discussed so widely, which is an important gap.

The study aims to identify how an interdisciplinary approach can be applied to effectively integrate soft skills into curricula. Similarly, different institutions and programmes may have different approaches to developing soft skills, which can lead to unevenness in the level of student learning. The study aims to identify the best methods and strategies for interdisciplinary learning that will help standardise and improve the effectiveness of this process. An important problematic aspect is the interaction at the level of teacher-student in the context of soft skills development. In particular, the effectiveness of soft skills development often depends on the quality of interaction between teachers and students. The study considers the possibilities of creating a positive educational environment and tools to support this interaction.

1.2. Research focus

This research article is devoted to the study of an interdisciplinary approach to the development of Soft Skills in the educational process. An interdisciplinary approach is defined as the integration of various disciplines, knowledge, and methodologies to create a comprehensive approach to the development of students' key skills.

This approach takes into account the importance of interaction between different fields of knowledge, providing a deeper understanding and a high level of adaptability to various challenges. By analysing examples of successful implementation of an interdisciplinary approach in educational programmes, the article examines specific strategies and methods aimed at developing Soft Skills.

The study also emphasises the importance of interaction between teachers and students, as well as the use of innovative technologies to support this process.

1.3. Research aims and questions

Thus, the article offers an in-depth consideration of the issues related to the application of an interdisciplinary approach to the development of Soft Skills in the educational process, identifying the advantages and challenges of such an approach and contributing to further understanding and improvement of this aspect of education.

Accordingly, the purpose of the article is to analyse the interdisciplinary approach to the development of Soft Skills in the educational process through the prism of the study of knowledge and skills integration.

The realisation of this goal will require consideration of certain issues, in particular, a review of scientific literature and identification of specific methods used to achieve the goals of developing Soft Skills in students.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Soft skills are a set of interpersonal, communication, emotional intelligence, and adaptive skills that allow individuals to interact effectively in social situations, collaborate successfully, and respond flexibly to changes in their personal and professional environment.

In contrast to technical or hard skills, soft skills emphasise the holistic development of the individual, encompassing traits and behaviours that contribute to successful interaction, teamwork, and overall personal and professional effectiveness.

In general, soft skills are skills and personal qualities that influence the way a person interacts with others and solves various tasks in professional and personal life (Boiko, 2021). Table 1 shows the main elements of these skills.

Table 1. Key elements of soft skills

Element	Explanation
Communication	Ability to express thoughts clearly and effectively. Ability to listen and understand the points of view of others.

Teamwork	Ability to work effectively with others. Openness to interaction and exchange of ideas.
Leadership	Ability to lead and inspire others. Ability to take responsibility and make decisions.
Adaptability	Ability to easily adapt to new conditions and changes. Willingness to improve and develop.
Creativity and innovation	Ability to think creatively and propose new ideas. Openness to innovative approaches and problem solving.
Problem-solving	Ability to systematise and solve problems. Critical thinking and analytical skills.
Emotional intelligence	The ability to understand and manage your own emotions. Empathy and understanding of other people's emotions.
Organisational skills	Ability to effectively plan and organise work processes. Time and priority management.
Self-discipline	Ability to set and achieve personal and professional goals. Systematic and time management skills.

Source: compiled based on works: But & Panchenko (2016); Cegolon (2023); Kurinnyi & Cherkasova (2022); Rosa, Carvalho, & Barja (2022).

These key elements of soft skills are critical for success in various areas of life and work, as they affect interaction and effectiveness in a team, as well as contribute to personal development in general.

Soft skills are essential for maintaining positive relationships, facilitating effective communication, and adapting to the current demands of diverse and collaborative environments.

Modern researchers have described in detail the role of soft skills in various social spheres, including education. In particular, Scheerens, Van der Werf, & De Boer (2020) outlines the formation of socio-emotional skills in the education system within the emotional trend. Rosa, Carvalho, & Barja (2022) proved that the development of soft skills is important in a professional career where people have to face challenges that go beyond technical knowledge. In today's labour market, there is a need for professionals with behavioural or socio-emotional skills, especially in terms of communication and interpersonal relations, to effectively cope with situations that require adaptation and quick decision-making.

Therefore, modern scholars argue that the development of soft skills is an important part of the modern educational process Sumarni, Budiani, & Marliani (2023) described the role of STEAM education for the professional development of future professionals. At the same time, the work of Novais, Matelli, & Silva (2023) concerns the assessment of soft skills using fuzzy methods, with the main focus on the role of active learning sessions. The study by Kurinnyi & Cherkasova (2022) traced the key features of soft skills development in students while learning a foreign language. The researchers proved that in order to develop these skills, the following elements should be considered: team training, learning based on problem situations or cases, observation-based learning, metacognitive learning, improvisation, role-playing games (Kurinnyi & Cherkasova, 2022).

Enny (2021) describes the main strategies for developing soft skills in students. The study by England, Nagel, & Salter (2019) identifies the key aspects of using collaborative learning in the system of soft skills development. Zahorodna et al. (2022) describe the peculiarities of the formation of communicative competence in students. Tsekhmister, Konovalova, & Tsekhmister (2022) demonstrate the importance of control over the modern innovative educational process.

Tsekhmister et al. (2022) also described the formation of professional skills and their role in the formation of a specialist of the future. Saienko, Kurysh, & Siliutina (2022) studied the formation of digital competence through the prism of analysing new opportunities and

challenges of the future. Other scholars have also addressed similar issues (Ostanina et al., 2023; Koniari & Raftoulis, 2023).

In defining soft skills, it is important to consider the cultural context and learning characteristics, as this determines specific aspects of interpersonal interactions and professional performance. Cultural relevance requires considering different cultural norms, values, and expectations in the learning context, promoting sensitivity to differences (Ataeva, 2022; Maciej, 2023).

Therefore, contextual learning in an interdisciplinary framework emphasises the importance of learning in real or contextual situations where students can apply the knowledge and skills they have acquired to specific tasks or scenarios (Avby, 2022). Thus, it contributes to a deeper understanding and effective adaptation of soft skills to different situations, which increases their applicability in an interdisciplinary context.

This approach to learning not only increases the level of intercultural competence but also provides students with the opportunity to develop soft skills that are essential for success in a global interdisciplinary environment. For this reason, it is an urgent task to characterise soft skills in education through the prism of an interdisciplinary approach.

3. METHODOLOGY

3.1 General background

The study is a qualitative article, which involves summarising the results of previous researchers and adding new information to the scientific discourse. Accordingly, the work is based on a content analysis of the current literature and the use of generalisation and specification methods.

3.2. Data collection

The selection of literature was thorough and based on several pre-established specific criteria:

1. Relevance of the topic: consideration of works that actively discuss modern approaches to the development of soft skills in the context of the educational process and the integration of knowledge and skills.
2. Methodology and approaches: inclusion of studies that describe different methodologies and approaches to interdisciplinary learning and soft skills development.
3. Pedagogical aspects: focusing on literature analysing the role of teaching and pedagogical strategies in soft skills development.
4. Effectiveness of integration: a selection of papers that examine specific examples of successful integration of knowledge and skills in curricula.

Scientometric databases

The literature and sources were searched using scientometric databases, including Google Scholar, Scopus, and Web of Science (WoS). In particular, Google Scholar was used to identify a wide range of scientific sources, including articles, conference proceedings, and dissertations. Scopus and WoS were used to check the ranking and citation of articles, as well as to identify influential sources.

Keywords

The main keywords included "interdisciplinary approach", "soft skills development", "educational process", "knowledge and skills integration", "innovation", and "competencies". Combinations of keywords could also include phrases such as "soft skills development", "interdisciplinary education", "knowledge and skills integration".

Date range

The search was conducted in the range from 2016 to 2023. This date range allows us to include the latest research and papers that reflect the current state of affairs in the education sector.

No regional restrictions

There are no specific regional restrictions.

The topic under study is global in nature, so there are no regional restrictions.

These criteria helped to ensure that relevant and up-to-date sources were included to create a comprehensive literature review on the chosen topic.

Based on these criteria, 33 positions were selected.

3.3. Data analysis

The study is based on the content analysis of modern literature. The sources were included based on their relevance to the consideration of an interdisciplinary approach and the integration of knowledge and skills in the educational process. Preference was given to original research, literature reviews, and conceptual works that provide in-depth analysis and conclusions on the chosen topic. The study also used the methods of synthesis and induction. The study is based on the principles of generalisation and systematisation.

4. RESULTS

An interdisciplinary approach to the development of Soft Skills in the educational process is defined as a comprehensive and interactive approach aimed at integrating various knowledge and skills in order to effectively develop the personal, professional, and social competencies of students. This approach goes beyond traditional areas of knowledge, creating a unique platform for the development of Soft Skills - soft but important skills that include communication, leadership, interpersonal, and creative skills (Dobrovolska et al., 2021). This emphasises the importance of the interaction of different disciplines and areas of knowledge to form a complete personality that can successfully function in modern society.

The interdisciplinary approach to the development of Soft Skills emphasises the importance of cooperation between specialists from different fields to create a learning environment that not only transfers theoretical knowledge but also actively develops students' skills necessary for further success in various spheres of life and professional activity. The development of an interdisciplinary approach to form an appropriate level of soft skills among students in the educational process requires a set of measures and changes in both teaching methodology and organisational structures of educational institutions (see Table 2).

Table 2. Some ways of developing an interdisciplinary approach to the development of soft skills

| Method	Interpretation
Organisation of interdisciplinary courses	1. Development and implementation of special courses that combine elements of different disciplines and focus on the development of specific Soft Skills. 2. Introduce project-based courses where students have the opportunity to apply knowledge and skills from various subjects to solve real-world problems.
Stimulating cooperation between individual faculties	1. Organise inter-faculty working groups or committees to discuss opportunities for cooperation and collaboration. 2. Inviting teachers from different faculties to teach together or hold joint events.

Formation of project-based education	1. Development of interdisciplinary projects that involve the cooperation of students of different specialities. 2. Collaborate with industrial partners, stakeholders, or organisations to conduct real-world projects using interdisciplinary approaches.
Creation of interdisciplinary centres and laboratories	1. Creating centres where students can interact and exchange ideas, research, and skills. 2) Organising interdisciplinary research and laboratories to stimulate innovation and interaction.
Special internships and courses for teacher training	1. Provide opportunities for teachers to receive internships at other faculties or universities to enrich their experience and expand their teaching methodologies. 2. Organising trainings and seminars for teachers to share experiences and best practices from different fields.

Source: author's own elaboration based on Mahalli et al. (2019); Nedermeijer (2023); Piamsa-Nga & Poovarawan (2020); Pliusch and Sorokun (2022).

The development of an interdisciplinary approach requires universities and teachers to be flexible, tolerant of innovation, and actively willing to cooperate and interact across different fields of knowledge.

During the educational process and the implementation of the main provisions of the relevant educational programmes for the training of specialists, the importance of project-based learning methods is identified. These methods are focused on the self-improvement of individuals and are aimed at the formation and implementation of their professional and social needs. This, in turn, provides an opportunity to develop professional and socially relevant skills to fulfil future responsibilities. Acquiring soft skills is also identified as a step towards developing creativity and critical thinking. In the context of these skills, project-based learning technology also looks promising. The introduction of this technology, as shown in the study (Bai, 2022), contributes to the development of the ability to quickly adapt to changes in the modern world, especially in the context of the requirements of the modern socio-economic environment. The researchers also highlight that the ability to identify personal and professional development paths, complete work on time (which is important in the modern labour market), develop communication and teamwork skills, demonstrate experience and leadership qualities is the result of students' soft skills during their studies at university (Enguta Mwenzi & Andia Moyamani, 2023). Along with the project-based method, digital (interactive) and situational education technologies have significant potential for developing communication skills, initiative, responsibility, and teamwork.

The use of teaching methods is based on the identification of the peculiarities of soft skills development in higher education students. The main focus is on the need to update these skills among future specialists at the institutional level of higher education institutions. Acquiring soft skills is becoming key to ensuring effective professional activity of future university graduates. Particular attention is paid to the integration of traditional and distance learning methods, which can potentially complement each other in the university environment (see Figure 1).
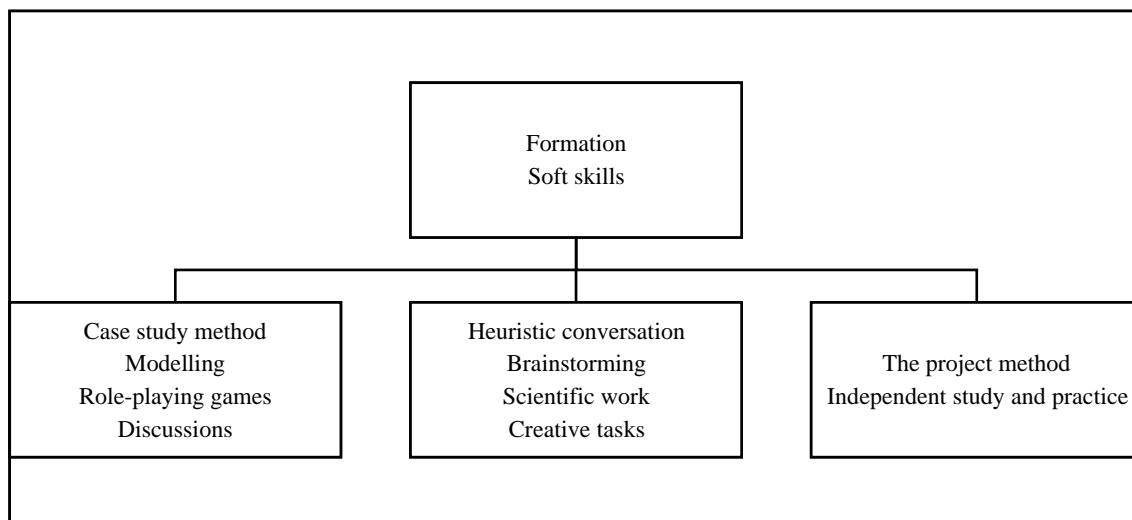
Figure 1. Methods of integrating the educational space to form an appropriate level of soft skills
Source: compiled by the authors based on Franco and Deluca (2019); Pinto-Llorente (2019); Truitt &
Ku (2018)

The introduction of these methods in the educational process, in addition to the development of the necessary soft skills, leads to an increase in students' competitiveness in the labour market. The predicted consequences include the readiness of future specialists to work in the chosen field, understanding the importance of self-improvement and self-development. These aspects are important for their professional efficiency and personal success.

In the context of the digital transformation of learning, the use of an interdisciplinary approach, and the improvement of efficiency and the development of soft skills, it is advisable to integrate the structural and logical links of individual educational elements, scientific activities, and creative components. This includes the use of digital educational platforms and participation in research and creative initiatives. An important task is to raise students' awareness of the opportunities to acquire soft skills through non-formal education (Avby, 2022). Recommendations include supplementing study programmes with information on available online courses, including digital educational platforms. At the same time, it is important to emphasise that courses separated from the mainstream do not always have the desired effect. With this in mind, the emphasis is on methodological training of teachers to systematically develop soft skills among students.

The work of lecturers should take into account not only the teaching but also the introductory aspects. It is important to develop teaching skills and readiness for tutoring, as well as to analyse progress in soft skills development and organise consultations for students. Supporting students' interests in their future profession and independent work are key aspects (England et al., 2019). For this reason, there is an emphasis on the need to develop soft skills in line with the modern requirements of society. The institutional level of universities should determine the vector of educational policy aimed at integrating soft skills into higher education through separate academic elements and extracurricular activities.

For a long time, researchers have not paid attention to game-based mechanisms for developing soft skills, which also belong to interdisciplinary approaches in education. The process of gamification, which was initially used only for entertainment purposes, has gained wide recognition and proved to be a very effective tool in the developmental context, in particular during learning (Franco and Deluca, 2019). The theory and practice of gamification have received significant developments in modern scientific works, which generally emphasise that entertainment is an effective tool for solving important business problems, such as

marketing, efficiency, innovation, customer engagement, human resources, and sustainable development. As for the use of video games in education, a number of separate studies have been devoted to this issue, usually emphasising the need to explain to students how and why a game fits into the overall context of learning.

Games as a part of an interdisciplinary interactive approach are noted as well as an element of optimising the competence approach in the professional training of specialists in digital learning. It is proposed to implement game stimulants for the development of soft skills. Some researchers suggest using game simulations to develop professional soft skills in future software engineers, pointing out how students develop professional soft skills in the process of playing (Kulichenko, Shramko, Rakhno, & Polyezhayev, 2022).

An analysis of general information on the use of game tools in educational processes indicates the positive impact of gamification of higher education on increasing the competitiveness of future professionals. A general review of theoretical sources shows a wide range of research aimed at studying video games as an important part of soft skills acquisition.

5. Discussion

The study has established the importance and effectiveness of using an interdisciplinary approach in the development of soft skills among students. It is proved that this approach promotes the integration of knowledge and skills, which occurs through the integration of theoretical knowledge and practical skills. Such conclusions are further supported by the results of the work (Bai, 2022; Cegolon, 2023). In addition, we should agree with the researchers (Franco and Deluca, 2019; Novais, 2023) who suggest that game-based learning methods should be more closely integrated into the educational space. The study showed that much less attention is paid to this aspect than to traditional forms of education. The integration of knowledge and skills within an interdisciplinary approach allows for the creation of unique educational scenarios that take into account various aspects of learning and development. With this approach, students are able to broaden their perspective, solve problems and challenges using an integrated approach from different perspectives.

However, the current development of digital technologies (and the computer environment in general) indicates the prospects of this area, as the latest opportunities have not yet been sufficiently assessed in the professional scientific literature (Pinto-Llorente, 2019). Moreover, this element of the modern world is actively developing, opening up additional opportunities. For this reason, gamification, as an important element of an interdisciplinary approach, is changing in line with digitalisation so that it will require constant scientific reassessment. An analysis of the use of game tools in higher education shows the positive impact of gamification on the competitiveness of future professionals. Theoretical sources point to a wide range of studies that emphasise the importance of video games as a key element for the development of soft skills.

The results of the study also showed that researchers are interested in finding models for applying certain methods to achieve a wider acquaintance of students with soft skills. Based on this, we can support the conclusions of Rosa et al. (2022) about the search for further models of pedagogical interaction between teacher and student, which will allow for the improvement of relevant skills in the future.

The findings are in line with the Bai (2022) that, together with the use of the project method, digital (interactive) and situational education technologies have great potential for developing communication skills, initiative, responsibility, and teamwork. Similarly, the study results confirm the opinion of Bakhmat, Kruty, Tolchieva, & Pushkarova (2022) about the relevance of transformations in the pedagogical environment. The active use of an interdisciplinary approach will require an appropriate response from teachers, better professional training, and continuous professional development in the future. The development of soft skills, as shown in

the results of the study, involves the use of new paradigms of pedagogical interaction based on a number of interdisciplinary approaches.

Although researchers emphasise the importance of digital competence in the context of professional training of future academic staff Bukliv, Kuchak, & Vasylyuk-Zaitseva (2023), there are several aspects that may not be fully agreed upon or could be further discussed. In particular, the difficulties mentioned in the article, such as lack of motivation and knowledge about digital competences, may simplify the multifaceted challenges associated with integrating digital technologies into education. Other factors, such as access to technology or institutional support, may also play a significant role.

Therefore, the novelty of the study is to create a comprehensive analysis of an interdisciplinary approach to the development of soft skills. The practical significance of the article lies in the fact that it adapts scientific approaches to the development of soft skills to modern challenges and trends in education. In particular, it is proposed to take into account the impact of digital transformation or changes in society on the needs for soft skills. New strategies or approaches to the integration of knowledge and skills in the educational process are also proposed, and innovative methods of introducing soft skills into various subjects or courses are confirmed based on theoretical material.

At the same time, the proposed study contains certain limitations that allow for future discussion of the relevance of the results obtained. Among these limitations, it is first of all worth pointing out the selection of scientific literature, according to which the main theoretical results of the work were formed. The point is that, despite all the criteria for selecting scientific papers for citation, it is possible that certain important views or empirical data contained in unprocessed articles may not be taken into account.

This limitation, for example, somewhat undermines the statement about the positive experience of using gamification as an interdisciplinary approach, its universality in terms of developing soft skills, and the overall competitiveness of future professionals. Some studies may point to contextual limitations or unintended consequences of using game-based methods in higher education. It is also possible that the effectiveness of gamification may depend on the individual characteristics of students and the specific learning context.

Further research in this area will make it possible to identify the weaknesses and strengths of using individual models to deepen soft skills among students.

6. CONCLUSION

Integration of knowledge and skills within an interdisciplinary approach emphasises the uniqueness of educational scenarios, promotes the broadening of students' perspectives, and development of a comprehensive approach to solving problems and challenges. The interdisciplinary approach to the development of soft skills emphasises the importance of cooperation between specialists from different fields to create a learning environment that actively develops not only theoretical knowledge but also the skills necessary for success in various spheres of life and professional activity. In the context of the digital transformation of learning and soft skills development, an interdisciplinary approach and integration of structural and logical links, including digital educational platforms and participation in research and creative initiatives, are appropriate. An important task is to raise students' awareness of soft skills through non-formal education. Recommendations include supplementing curricula with information about online courses, including digital educational platforms. The emphasis is on methodological training of teachers to develop soft skills among students. It is important to develop teaching skills, analyse progress in soft skills development, organise consultations for students, support their interests, and promote independent work. At the institutional level of universities, the vector of educational policy aimed at integrating soft skills through separate educational elements and extracurricular activities is determined.

REFERENCES

Ataeva, N. (2022). Teaching natural sciences through the prism of philosophy: An attempt to define the relationship. *Futurity Philosophy, 1*(4), 15–28. https://doi.org/10.57125/FP.2022.12.30.02

Avby, G. (2022). An integrative learning approach: Combining improvement methods and ambidexterity. *The Learning Organization*. https://doi.org/10.1108/tlo-10-2021-0127

Bai, H. (2022). Research of Project-Based Engineering Teaching Method. In H. Bai (Ed.), *Proceedings of the 2022 7th International Conference on Modern Management and Education Technology (MMET 2022)* (pp. 29-37). Atlantis Press SARL. https://doi.org/10.2991/978-2-494069-51-0_5

Bakhmat, N., Kruty, K., Tolchieva, H., & Pushkarova, T. (2022). Modernization of future teachers' professional training: On the role of immersive technologies. *Futurity Education, 2*(1), 32–41. https://doi.org/10.57125/FED/2022.10.11.22

Boiko, A. (2021). Innovative development of non-formal education in Ukraine: Definition of soft skills. *Theoretical and Methodical Problems of Children and Youth Education, 1*(25), 22-33. https://doi.org/10.32405/2308-3778-2021-25-1-22-33

Bukliv, R., Kuchak, A., & Vasylyuk-Zaitseva, S. (2023). Professional training of future academic staff and digitalization of education: Analysis of mutual influences. *Futurity Education, 3*(1), 76–85. https://doi.org/10.57125/FED.2023.25.03.06

But, V., & Panchenko, G. (2016). Implementation modern forms of lifelong learning in Ukraine. *Continuing Professional Education: Theory and Practice*, (3-4), 122-126. https://doi.org/10.28925/1609-8595.2016(3-4)122126

Cegolon, A. (2023). Soft skills and general education. *Formore - Open Journal per la formazione in rete, 23*(1), 112-122. https://doi.org/10.36253/form-13757

Dobrovolska, N., Moroz, L., Shpak, M., Tsekhmister, Y., & Vovchenko, O. (2021). Motivational mechanisms of emotional intelligence development in practicing psychologists. *AD ALTA: Journal of Interdisciplinary Research, 11*(2), 54-59. https://www.magnanimitas.cz/ADALTA/110221/papers/A_08.pdf

England, T. K., Nagel, G. L., & Salter, S. P. (2019). Using collaborative learning to develop students' soft skills. *Journal of Education for Business, 95*(2), 106–114. https://doi.org/10.1080/08832323.2019.1599797

Enguta Mwenzi, J. E., & Andia Moyamani, E. (2023). Social networks addictions and academic performance of students at the University of Kinshasa. *Futurity Education, 3*(2), 213–226. https://doi.org/10.57125/FED.2023.06.25.13

Enny, R. (2021). *Learning Soft Skills: Expert Strategies to Improve Your Communication Skills: Develop Soft Skills*. Independently Published.

Franco, P. F., & DeLuca, D. A. (2019). Learning through action: Creating and implementing a strategy game to foster innovative thinking in higher education. *Simulation & Gaming, 50*(1), 23–43. https://doi.org/10.1177/1046878118820892

Koniari, D., & Raftoulis, G. (2023). Digital competence and school leadership in Greece. *Futurity Education, 3*(2), 153–165. https://doi.org/10.57125/FED.2023.06.25.10

Kulichenko, A., Shramko, R., Rakhno, M., & Polyezhayev, Y. (2022). Resistencia educativa bidimensional en el establecimiento educativo terciario moderno de Ucrania. *Apuntes Universitarios, 13*(1), 474–493. https://doi.org/10.17162/au.v13i1.1351

Kurinnyi, O. V., & Cherkasova, T. A. (2022). Soft skills formation while learning foreign languages. *Innovate Pedagogy, 2*(44), 7–10. https://doi.org/10.32843/2663-6085/2022/44/2.1

Maciej, P. (2023). Philosophical futurism and the evolution of education: Analyzing personality consciousness, ICT, and forward-thinking pedagogical strategies. *Futurity Philosophy, 2*(2), 4–16. https://doi.org/10.57125/FP.2023.06.30.01

Mahalli, Nurkamto, J., Mujiyanto, J., & Yuliasri, I. (2019). The implementation of Station Rotation and Flipped Classroom models of blended learning in EFL learning. *English Language Teaching*, *12*(12), 23. https://doi.org/10.5539/elt.v12n12p23

Nedermeijer, J. (2023). Case study design of the workshop 'Redesign your course in a blended learning course'. In J. Nedermeijer (Ed.), *Evidence-Based Blended and Online Learning* (pp. 165-183). BRILL. https://doi.org/10.1163/9789004681774_011

Novais, A. S. de, Matelli, J. A., & Silva, M. B. (2023). Fuzzy soft skills assessment through active learning sessions. *International Journal of Artificial Intelligence in Education*. https://doi.org/10.1007/s40593-023-00332-7

Ostanina, A., Bazyl, O., Tsviakh, O., & Dovzhuk, N. (2023). Formation of digital competence in higher education students as a basis for the transformation of education of the future. *Futurity Education, 3*(1), 139–149. https://doi.org/1057125/FED.2023.25.03.10

Piamsa-Nga, P., & Poovarawan, Y. (2020). Design a curriculum with user-experience analysis: Case study computing science curriculum. In P. Piamsa-Nga & Y. Poovarawan, *Blended Learning. Education in a Smart Learning Environment* (pp. 25-36). Springer International Publishing. https://doi.org/10.1007/978-3-030-51968-1_3

Pinto-Llorente, A. M. (2019). Learner perception of using case study method as a teaching method in higher education. In A. M. Pinto-Llorente, *Case Study Methodology in Higher Education* (pp. 209-229). IGI Global. https://doi.org/10.4018/978-1-5225-9429-1.ch010

Pliushch, V., & Sorokun, S. (2022). Innovative pedagogical technologies in education system. *Revista Tempos e Espaços em Educação, 15*(34), e16960. https://doi.org/10.20952/revtee.v15i34.16960

Rosa, C. da S. R., Carvalho, A. G. F., & Barja, P. R. (2022). Soft skills. *Revista Univap, 28*(57). https://doi.org/10.18066/revistaunivap.v28i57.2592

Saienko, V., Kurysh, N., & Siliutina, I. (2022). Digital competence of higher education applicants: New opportunities and challenges for future education. *Futurity Education, 2*(1), 42–52. https://doi.org/10.57125/FED/2022.10.11.23

Scheerens, J., Van der Werf, G., & De Boer, H. (2020). Measurement of soft skills in education. In J. Scheerens, G. Van der Werf, & H. De Boer, *Soft skills in education* (pp. 141-189). Springer International Publishing. https://doi.org/10.1007/978-3-030-54787-5_6

Sumarni, N., Budiani, N., & Marliani, L. (2023). Engineering learning model in improving hard skills and soft skills kindergarten level. *Scientia, 2*(2), 105–110. https://doi.org/10.51773/sssh.v2i2.237

Truitt, A. A., & Ku, H.-Y. (2018). A case study of third grade students' perceptions of the station rotation blended learning model in the United States. *Educational Media International, 55*(2), 153–169. https://doi.org/10.1080/09523987.2018.1484042

Tsekhmister, Y. V., Kotyk, T. M., Matviienko, Y. S., Rudenko, Y. A., & Ilchuk, V. V. (2021). The effectiveness of augmented reality technology in STEAM education. *Apuntes Universitarios, 12*(1), 250–267. https://doi.org/10.17162/au.v11i5.932

Tsekhmister, Y., Konovalova, T., & Tsekhmister, B. (2022). Quality control of educational process in the lyceum of medical profile when learning in distance mode during the COVID-19 pandemic. *Revista Amazonia Investiga, 11*(57), 121–132. https://doi.org/10.34069/ai/2022.57.09.13

Tsekhmister, Y., Vizniuk, I., Humeniuk, V., Dolynnyi, S., & Polishchuk, A. (2022). Formation of professional skills of future physicians in the process of professional training. *Revista Eduweb, 16*(2), 180–193. https://doi.org/10.46502/issn.1856-7576/2022.16.02.13

Zahorodna, O., Saienko, V., Tolchieva, H., Tymoshchuk, N., Kulinich, T., & Shvets, N. (2022). Developing communicative professional competence in future economic specialists in the conditions of postmodernism. *Postmodern Openings, 13*(2), 77–96. https://doi.org/10.18662/po/13.2/444