Beata Poteralska
https://orcid.org/0000-0002-4670-0024

DOI: 10.34866/0t88-ee96

Future-oriented Innovative Practices for Human Resources Development

Zorientowane na przyszłość innowacyjne praktyki w zakresie rozwoju zasobów ludzkich

Słowa kluczowe: rozwój zasobów ludzkich, kompetencje, aktywizujące metody nauczania-uczenia się, foresight, Futures Literacy.

Streszcznie: Dynamiczne zmiany zachodzące na rynku pracy uzasadniają konieczność systematycznej weryfikacji i aktualizacji kompetencji. Kompetencje niezbędne w przyszłości będą obejmować dwie kategorie: kompetencje techniczne STEM oraz miękkie (np. kreatywność, radzenie sobie z niepewnością, nieprzewidywalnością, szybkie dostosowywanie się do zmieniającego się otoczenia) (Dębkowska i in., 2022, Klowden i Lim, 2021, Sala i in., 2020). Obecnie obserwowane są rozbieżności pomiędzy kompetencjami nabytymi w ramach systemu edukacji a oczekiwaniami przedsiębiorstw (Bauer i in., 2011, Haukka, 2011). Ponadto badania jednoznacznie wskazują, że ludzie nie uczą się dobrze, będąc biernymi odbiorcami wiedzy dostarczanej przez ekspertów. Skuteczna nauka wymaga aktywnego zaangażowania w proces (Serrano i in., 2019, Bolstad i in., 2012). Celem artykułu jest analiza metod nauczania-uczenia się oraz zaproponowanie metod, które można zastosować w systemie edukacji formalnej w celu nabycia przyszłościowych kompetencji. Autorka proponuje wykorzystanie podejść foresight i Futures Literacy, pozwalających z jednej strony na aktywne uczestnictwo w procesie nauczania-uczenia się, a z drugiej strony na nabycie szczególnie potrzebnych miękkich kompetencji zorientowanych na przyszłość, pozwalających na radzenie sobie z niepewnością i nieprzewidywalnością charakteryzującą rynek pracy.

Key words: human resources development, competences, activating teaching-learning methods, foresight, Futures Literacy.

Abstract: Dynamic changes taking place on the labour market justify the need for constant development of competences. Competences necessary in the future will comprise two categories: STEM (Science, Technology, Engineering, and Maths) and soft competences (e.g. creativity, dealing with uncertainty, unpredictability, and quick adaptation to the changing environment) (Dębkowska et al., 2022, Klowden & Lim, 2021, Sala et al., 2020). However, competence gaps between competences acquired in education and market demand by companies are observed (Bauer et al, 2011, Haukka, 2011). Moreover, investigations clearly show

that people do not learn well as passive recipients of knowledge delivered by experts. Effective learning requires active engagement in the process (Serrano et al., 2019, Bolstad et al., 2012). The paper is aimed at analysing teaching-learning methods and proposing methods which could be used in the formal education system to acquire future-oriented competences. The author proposes to apply foresight and Futures Literacy approaches allowing, on the one hand, for active participation, and on the other hand, for the acquisition of particularly needed soft future-oriented competences, mainly dealing with uncertainty and unpredictability.

Introduction

Changes observed on the labour market, resulting among others from a high level of uncertainty of the business environment, cause the need to change the way of human resources development. It is necessary to develop competences adjusted to the needs of the future, called 21st century skills or future-oriented competences (Ioannidou & Erduran, 2022, Poteralska et al. 2022, Voogt et al., 2013). Competences in the future will comprise two categories: STEM (Science, Technology, Engineering, and Maths) and 'soft skills' (amongst others: creativity, problem-solving skills, critical thinking, collaboration, communication, dealing with uncertainty, unpredictability, and quick adaptation to the changing environment) (Klowden & Lim, 2021, Sala et al., 2020, Habets et al., 2020, Wang & Liu, 2020, Petru & Marejka, 2014). Future-oriented competences listed by scholars are consistent with the top skills indicated by employers, who mention the importance of both specific professional skills and soft skills enabling one to function in business in conditions of uncertainty (PARP Report, 2020, Dębkowska et al., 2022) and with future employees' opinions stressing first of all the need of possessing soft skills (Matuszewska-Kubicz, 2021).

Thus, a set of competences adjusted to the needs of the future labour market is needed. At the same time, the ways of acquiring competences are changing as well. The traditional approach to education and training where students, gathered in a class, passively receive information from the teacher is losing its relevance (Lalit & Piplani, 2019). Firstly, a transition to online distance teaching and learning in all educational institutions is a fact (Seifert & Bar-Tal, 2023), intensified by Covid-19 pandemic (Azawi et al., 2020). Secondly, the teaching-learning methods are dynamically changing to meet the changes on the labour market and expectations of students. The paper is focused on this second aspect.

Investigations clearly show that people do not learn well as „spectators", passive recipients of knowledge delivered by experts (Serrano et al. 2019, Bolstad et al. 2012). Students prefer teaching methods that lead to active learning (Vaclavik et al. 2022) and expect that the teaching-learning process will enable them to enhance their maximum potential (Shehhi et al., 2021). Educational institutions must adjust to the changing trends and the new expectations to equip students with high level professional and personal skills (Bukharina, 2017, Petru & Marejka, 2014). Thus, there is a need to change the form of operation of these institutions and the way of

teaching (Petru & Marejka, 2014). And secondly, having in mind that the teaching-learning methods have "a significant impact on the learning process of students" (Khalil & Semono-Eke, 2020) it is necessary to change the methods used. Effective learning requires active engagement in the process. Activating forms of teaching are necessary.

Thus, the paper raises the research question: What activating teaching-learning practices can be used to enable human resources development meeting contemporary needs of the market?

The paper is aimed at analysing teaching-learning methods used in the formal education system and proposing methods for human resources development which could be used to enable one to acquire future-oriented competences.

Methods

To build a pool of knowledge on teaching-learning methods the author of the paper studied publications in the Web of Science database. The articles were selected based on the search criterion 'future of teaching and learning methods'. Publications from the last 10 years (2014–2023) were considered.

Taking into account the current need to apply teaching-learning methods activating the students, in the next step the obtained results were searched in sequence with the criteria as follows: 'activating', 'active', 'interactive', 'participatory'. Moreover, because of the main characteristics of the future labour market, namely uncertainty and unpredictability, the results were also searched with the criteria 'uncertainty' and 'unpredictability" (Tab. 1).

Table 1. Selection of articles in the Web of Science database

Search criteria	Web of Science	Database after reading abstracts	Final database (after reading whole papers)	Final database (after removing duplication)
future of teaching and learning methods (topic)	8,960	131	58	55
years: 2014–2023	7,079			
activating (search within results)	22	6	2	
active (search within results)	712	64	32	
interactive (search within results)	614	42	19	
participatory (search within results)	84	5	2	
uncertainty (search within results)	85	14	3	
unpredictability (search within results)	1	0	0	

Source: Author.

The conducted state of the art analysis was aimed at collecting information on teaching-learning methods currently used, and the reasons and advantages of their use. A particular attention was paid to the aspects of engaging and activating students. On the other hand, with taking into account the main characteristics of the future labour market, namely uncertainty and unpredictability, it was analysed if these aspects are taken into consideration while selecting teaching-learning methods.

Against the conducted state of the art analysis and with taking into account the author's experience in conducting foresight and Futures Literacy projects the author proposes to apply foresight and Futures Literacy approaches in the teaching-learning process. The justification for applying these anticipation approaches for developing future-oriented competences is provided with examples of their use in the educational practice.

Results

The conducted state of the art analysis shows the co-existence of traditional and activating teaching-learning methods, including innovative ones (Ruza & Tortosa, 2019) and assumes the usefulness of applying various methods in the education system (Ilidzhev & Ibragimova, 2018).

Importance of selecting appropriate teaching-learning methods results from the fact that the development of competences required by the labour market is assumed to be "heavily conditioned by the teaching-learning methods used" (Coll-Serrano et al., 2018). Shvetsova (2019) stresses the benefits of using combined teaching methods, as it affects the process of developing competences in different ways. Coll-Serrano et al., (2018) indicates that especially in case of the so-called soft competences, they are more effectively developed in active learning environments, in which innovative methods are used than in conventional teaching-learning process.

A set of teaching-learning methods is continuously enriched. The directions of their development and the selection of particular teaching-learning methods depend on various factors, among others changes in the educational institutions and their environment, the needs of future employment, the organisation of teaching and the use of new learning technologies in a particular educational institution, expectations of students, and competences, preferences, and motivation of teachers, but also the level of education and the knowledge area, in which teaching-learning takes place (Verdiyeva, 2021, Fan 2016). A teacher is assumed to be the central element determining the form and scale of applying active teaching methods (Verdiyeva, 2021).

As already mentioned, the future increasingly uncertain and unpredictable labour market requires both STEM (Science, Technology, Engineering, and Maths) and soft skills. Employers require not only knowledge related to a particular field of study, technical (hard) skills but also soft skills (Kruntoradova & Fojtu, 2015).

The use of activating teaching-learning methods is recommended for developing both categories of competences (Wang & Liu 2020). Sari, et al. (2020) stress that to support STEM-based learning, activating methods are needed, accompanied by future science interactive teaching materials. Much attention is paid to the teaching-learning methods used for the development of soft skills. Silva, et al. (2019) claim that "soft skills will play a critical role for the future generations in many industries". Soft skills are of key importance for obtaining and keeping the job. Investigations show that they are the most important differentiator in the process of hiring employees (Sutton 2002) and that a lack of soft skills is one of factors of dismissing younger workers from work (Mainga et al, 2022).

Usually the applied in practice activating teaching-learning methods enable the students to acquire both topic-specific professional knowledge and develop soft skills. Individual methods may serve as examples:

- Design Thinking, which "consists of the formulation and resolution of complex problems through a creative human-centered process, being suitable for challenges characterised by a high level of uncertainty" (Calavia et al, 2022).
- Case study method, which usually "involves the presentation of a story, often through a written description that requires students to engage in a process of decision-making with regards to a particular real-world based situation" (Dorta-Afonso, 2019, Bogacka & Pikon, 2017, Fernandez-Zamudio et al., 2016).
- Collaborative seminars contributing to learn "significant course contents" and acquiring communication skills, competences of learning to learn, and interpersonal team working abilities (Borrasca, 2014).
- Expert seminars, in which "participants (students) act as experts in particular field of knowledge and are invited to gradually investigate (analyse) the problem and suggest solutions" (Tolkacheva, 2016), and
- Microlearning consisting in "using a cell phone and the student's interaction with the teacher and the group on social networks and educational platforms" (Romanenko et al., 2023).

Numerous advantages of applying activating teaching-learning methods are stressed, both for students and teachers and for the educational process. The main advantages seen from the perspective of a student comprise:

- Stimulate students to think in an independent way, "make them think and come up with their own understanding of a topic" (Tillinghast et al., 2016).
- Achieve higher commitment, engagement, increased level of active student participation (Hocker, et al., 2020, Lalit & Piplani, 2019, Mendoza, 2017).
- Foster mutual learning and obtain high quality feedback (Hocker, et al., 2020, Lalit & Piplani, 2019).
- Enable acquisition of management skills, including problem-solving skills, strategic thinking and analytical capabilities" (Dorta-Afonso, 2019, Fernandez-Zamudio et al., 2016).
- Stimulate critical thinking (Buchberger, et.al., 2017).

- Support the skills of taking decisions especially in dynamic contexts, including group decision-making (Dorta-Afonso, 2019, Fernandez-Zamudio et al., 2016).
- Improve communication and interpersonal skills (Dorta-Afonso, 2019, Lalit & Piplani, 2019).
- Support development of skills of collaborative work (Eveillard, 2021).
- Increase students' confidence in their ability to complete a task (Eveillard, 2021).
- Increase satisfaction from the learning process and the learning outcomes (Bilyk et al., 2023, Dorta-Afonso, 2019).

In general it can be stated that the appropriate use of activating teaching-learning methods results in the increase in the competitiveness of students thanks to enabling them to meet labour market needs which require "professionals with professional mobility, knowledge, skills, and high professional competence" (Lavrentiev et al., 2017).

The use of activating teaching-learning methods brings benefits also for teachers applying them. The advantages for teachers comprise:

- Redefinition of the role of the teacher, thanks to "a shift from teacher-led to student-led activity within the classroom", which fosters a positive learning attitude among students and increases their motivation, which at the same time have a positive impact on teacher's satisfaction (Ma, 2023).
- Acquisition of "new teaching skills, improved teaching and presentation skills, and learned new tools" (Inra et al, 2017).

While analysing the benefits of applying activating teaching-learning methods for the educational process itself the advantages comprise:

- Creating better learning situations in comparison with conventional lectures thanks to the use of interactive, focused on practice methods (Florea, 2014).
- Enhancing "the overall performance of the education process" (Huang et al., 2016).
- Significant increase in the range of the material learnt (Bilyk et al., 2023).
- Improved transmission of information (Inra et al, 2017).

Some scholars describing the aspects of using activating teaching-learning methods indicate that they are suitable for coping with uncertainty (Calavia et al, 2022) or in case of innovative methods they imply uncertainty and permanent change (Ruza & Tortosa, 2019). A limited number of scholars discuss the possibility of applying futures studies approaches in the teaching-learning practice. Bodinet (2016), expert in the area of futures studies, stresses the necessity to implement new student-centered teaching methods into classrooms of 2030 and beyond, among which he mentions the visioning workshop, often used in foresight exercises. He is convinced that it is an appropriate tool to develop competences to create desirable futures. He stresses that students with such abilities and conscious that they are the agents of their future, become more aware of the influence of their today's decision on

their future. In this way they acquire competences needed to function on the future labour market.

Klakurka and Irwin (2016), taking into account benefits, for organisations and strategists, of conducting foresight on the organisational level, for supporting strategic decision making, propose the use of foresight techniques in the teaching-learning process of students. Although the authors are aware that using foresight, as a tool appropriate for building cross-functional perspective on the future, would be appropriate to equip students with competences needed in the future, at the same time they are conscious that the use of foresight techniques, like scenarios, may be new to educational institutions.

Summing up, numerous teaching-learning practices can be used to support the process of developing human resources within formal education system, thanks to equipping students with competences meeting contemporary and future needs of the market. The use of particular methods depends of many aspects starting from general conditions in which educational institutions operate, through the situation in a particular educational institution ending with the human aspect – students expectations and teachers potential. The most important factor influencing the use of particular methods is a teacher (Verdiyeva, 2021). In case of activating methods the role of a teacher, who coordinates students' active work, is of key importance (Kaliuzhna & Peretiatko, 2016).

Discussion

A very limited number of scholars directly relate the proposed teaching-learning methods with uncertainty and unpredictability, which are the key characteristics of the future labour market. However, the necessity to embed uncertainty in the teaching-learning process is obvious (Yarygin et al., 2019, Vaganova et al., 2019). In order to make decisions under uncertainty and unpredictable changes, managers need to possess interdisciplinary competencies (Gitelman & Kozhevnikov, 2018). The approach of educating in a way enabling a student to quickly adapt to constantly changing conditions and to act in conditions of uncertainty is gaining relevance (Vaganova et al., 2019, Rodionov et al., 2021).

Since the current world is characterised by uncertainty and unpredictability, and foresight and Fututes Literacy approaches are adequate for dealing with uncertainty and unpredictability (Keller et al., 2015, Millar et al., 2018) the author of this paper proposes to use them as teaching-learning methods appropriate for developing competences meeting the labour market needs.

Foresight is a well-established tool enabling one to face discontinuous change (Keller et al., 2015), used for a systematic look into the future, enabling one to draw conclusions for the present (Cuhls, 2003). "Foresight is a process by which one comes to a fuller understanding of the forces shaping the long-term future which

should be taken into account in policy formulation, planning and decision making" (Coates, 1985).

Futures Literacy is a practical skill that can be defined as the capacity to identify, design, target and deploy anticipatory assumptions and the related imaginary futures (Miller and Sandford 2019, Miller 2019).

A limited number of scholars (Bodinet, 2016, Klakurka and Irwin, 2016) propose to use futures studies methods, including foresight as teaching-learning practices and they see clear advantages of possible use of these anticipatory techniques.

On the other hand, foresight and Futures Literacy approaches are seen by scholars as one of the most effective tools in the area of developing students' competences enabling them to successfully cope with modern conditions (Dedov et al, 2021). Numerous advantages of using foresight and Futures Literacy in the teaching-learning process can be listed. They allow, on the one hand, for active participation of students and applying participant centred learning (Scott & Wasti, 2018) and on the other hand, for the acquisition of currently needed future-oriented competences, which allow students to learn by themselves and face an uncertain and changing world, including copying with future career uncertainty (Liu & Li, 2023, Hernandez-de-Menendez et al., 2020).

At present foresight and Futures Literacy approaches are rarely used in the formal education system. However, some examples of organising workshops with the use of these anticipatory approaches, among others to shape the competence of coping with uncertainty, (Forte et al., 2020) can be given. They comprise: ACTVOD workshop (Lauttamaki, 2016), the workshop, based on the use of the scenario intervention methodology (Bourmistrov & Amo, 2022), and foresight sessions for students of professional educational institutions (Dedov at al., 2021). Moreover, a special training course aimed at supporting university students in the process of career planning and personal development (Kononiuk & Rollnik-Sadowska, 2022) has been developed. It assumes the use of foresight approach to support professional and personal development and apply Futures Literacy approach to let students experience various ways of 'using the future' in the context of their future profession.

The curricula should be diversified to include foresight and Futures Literacy approaches to equip students with tools enabling them to anticipate the future and adapt quickly (Dan-Suteu & Giorgi, 2019). Some formal changes in curricula at universities have already been implemented. The Technological University Dublin, which introduced the Future of Work module into the curriculum (Hennigan, et al., 2020) may serve as an example here. The module is aimed at preparing students to the dynamically changing world of work, characterised by uncertainty and unpredictability.

Numerous benefits of applying foresight and Future Literacy techniques in the formal teaching-learning process can be listed, however these methods are rarely

used. The reasons for this situation should be discussed. One of the reasons is the fact that these approaches are traditionally used by researchers, strategists, and policymakers, not teachers. They are simply not known by many teachers, whereas, as already stated, teachers are decisive for using a particular teaching-learning method. Another reason can be a specific character of foresight and Futures Literacy techniques. To use their potential it should be e.g. organised a few hour workshop or a set of succeeding activities within teaching a particular subject should be planned, not a single lesson. It is not always possible or easy. It is also demanding. Applying foresight or Future Literacy approaches can be treated as innovation in the education system, whereas introducing innovation into any educational setting is known to be challenging (Eyal & Gil, 2020).

Implementation of innovative teaching-learning practices into education curricula, especially in strong cooperation with business, providing students with real work context, is assumed to be the future of education (Silva et al., 2019). Foresight with its interactive character assuming gathering expertise and experience of representatives of different spheres: research and development, industry, government, NGOs, the media and society meets these expectations.

Conclusion

On the basis of the carried out analyses it is seen that the activating teaching-learning methods are already used for developing both STEM and soft skills, of which the latter group is gaining importance in the context of the contemporary and future labour market. A big variety of methods is currently used and innovations are still occurring and will be implemented in this field. It can be definitely stated that the future teaching-learning process will use activating methods to a much greater extent than today.

Taking into account the focus of the paper on competences necessary on the future labour market, which is characterised by uncertainty and unpredictability, the author proposes the use of foresight and Futures Literacy methods in the formal education system. The proposal is based on the state of the art analyses related to the teaching-learning practices, literature review has conducted by the author for years on the use of foresight and Futures Literacy methods, and own experience in applying these anticipation approaches in practice and conducting research and educational projects. Advantages of applying the suggested approaches are listed and are clear. Foresight and Futures Literacy techniques are of participatory, activating character, which is a common feature with many already used teaching-learning methods. However, they have an additional advantage. They equip students with the ability to cope with the uncertain future. They are strongly recommended for developing future-oriented competences, mainly soft skills needed to cope with uncertain and unpredictable labour market.

However, the incorporation of these methods in the formal education system is challenging. Thus, so far only a limited number of examples can be given.

The next step of research would comprise firstly searching for additional examples of applying foresight or Futures Literacy in the formal teaching-learning process, and secondly looking for ways of effective use of the mentioned anticipation approaches within formal education to support the process of human resources development.

Acknowledgment

This paper is an output of the science project entitled "Future-oriented Participatory Teaching Methods" (internal project of Jan Kochanowski University of Kielce no SUPB.RN. 23.074).

References

1. Al Azawi, R., Al-Obaidy, M. and Qaddoum, K. (2020). Mobile Augmented Reality (MAR) in Distance Learning: Present and Future. *Proceedings of the 7th International Conference on Information Technology Trends*. Online edition, pp. 140–145.
2. Al Shehhi, M., Alzouebi, K. and Ankit, A. (2021). An examination of the emotional intelligence of school principals and the impact on school climate in public schools in the United Arab Emirates. *Journal of Applied Research in Higher Education*, vol. 13, issue 5, pp. 1269–1289.
3. Bauer, C., Viola, K. and Strauss, C. (2011). Management skills for artists: 'learning by doing'? *Int. J. Cult. Policy*, vol. 17, issue 5, pp. 626–644.
4. Bilyk, V., Banak, R., Bardadym O., Sokal M., Anichkina, O. (2023). Introduction of interactive teaching methods in modern schools. *Eduweb – Revista de Tecnologia de Informacion y Comunicacion en Educacion*, vol. 17, issue 2, pp. 199–209.
5. Bodinet, J. C. (2016). Pedagogies of the futures: Shifting the educational paradigms. *European Journal of Futures Research*, vol. 4, article number: 21.
6. Bogacka, M. and Pikon, K. (2017). Work in Progress: Combining active learning methods in engineering education. *Proceedings of 2017 IEEE Global Engineering Education Conference*. Athens, Greece, pp. 1863–1867.
7. Bolstad, R., Gilbert J., McDowall S., Bull A., Boyd S., and Hipkins R. (2012). *Supporting future-oriented learning & teaching – a New Zealand perspective Report to the Ministry of Education*, New Zealand Council for Educational Research, Ministry of Education, New Zealand.
8. Borrasca, B. J. (2014). Collaborative learning in the university: models and practice. *Redu-Revista de Docencia Universitaria*, vol. 12, issue 4, pp. 281–302.
9. Bourmistrov, A., Amo, B. W. (2022). Creativity, proactivity and foresight. *Technological Forecasting and Social Change*, vol. 174, Article Number 121215.
10. Buchberger, I., Bolcevic, V. and Kovac, V. (2017). Critical Thinking in Education: Contributions and Possible Directions. *Metodicki Ogledi-Methodical Review*, vol. 24, issue 1, pp. 109–129.
11. Bukharina, A. Y. (2017). Talent management: what to teach employees today to survive tomorrow. *Social Psychology and Society*, vol. 8, issue 1, pp. 144–162.
12. Calavia, M. B., Blanco, T., Casas, R., Dieste, B. (2022), Improving Design Project Management in Remote Learning. *Sustainability*, vol. 14, issue 17, 11025.
13. Coates J. F. (1985). Foresight in federal government policymaking. *Futures Research Quarterly*, vol. 1, pp. 29–53.
14. Coll-Serrano, V., Pardo-Garcia, C. and Perez, P. J. (2018). Teaching-learning methods and their effect on professional development and the development of graduates' competencies. *Cultura y Educacion*, vol. 30, issue 3, pp. 556–583.

15. Cuhls, K. (2003). From forecasting to foresight processes – new participative foresight activities in Germany. *Journal of Forecasting*, vol. 22, issue 2–3, pp. 93–111.
16. Dan-Suteu, S. A. and Giorgi, G. (2019). Future Studies, Forecast and Foresight – Critical Considerations and Relevant Findings. *Proceedings of the 15th International Scientific Conference on eLearning and Software for Education*. Bucharest, Romania, vol I, pp. 130–137.
17. Dębkowska, K., Kłosiewicz-Górecka, U., Szymańska, A., Ważniewski, P., and Zybertowicz, K. (2022). *Kompetencje pracowników dziś i jutro.* Polski Instytut Ekonomiczny, Poland.
18. Dedov, N. P., Fantalova, E. B., Vaganova, O. I., Lapshova, A. V. and Kuznetsov, V. A. (2021). Role of foresight sessions in professional self-development of students. *Revista de la Universidad del Zulia. 3ª época*, vol. 12, issue extra 35, pp. 504–515.
19. Dorta-Afonso, D. (2019). Teaching organizational behavior in the bachelor of tourism through the case study method. *Journal of Hospitality Leisure Sport & Tourism Education*, vol. 25, 100204.
20. Eveillard, M. (2021). Applying active learning in pharmaceutical studies by the way of team-based learning. *Annales Pharmaceutiques Francaises*, vol. 79, issue 3, pp. 324–333.
21. Eyal, L. and Gil, E. (2020). Design patterns for teaching in academic settings in future learning spaces. *British Journal of Educational Technology*, vol. 51, issue 4, pp. 1061–1077.
22. Fan, J. (2016). Analysis of the Reform and Innovation in Higher Vocational English Education, *Proceedings of the 4th International Conference on Management Science. Education Technology, Arts, Social Science and Economics*. Jinan, P.R. China, pp. 1465–1470.
23. Fernandez-Zamudio, M. A., Melian, A. and Galstyan, R. (2016). Case Method Teaching for Fostering Independent Learning in Engineering Courses. *Proceedings of 10th International Technology, Education and Development Conference*. Valencia, Spain, pp. 7866–7870.
24. Florea, R. (2014). Teaching methods in adult education. An appraisal of the effectiveness of methods used in training future teachers. *Proceedings of the 4th International Conference on Adult Education: Adult Education in Universities: Local and Regional Perspectives,* vol. 142. Iasi, Romania, pp. 352–358.
25. Forte P., Miller R., Bowen T., Vissers J., Faubel R., Pavi E., Malmstrom T. (2020). A Futures Literacy Application in Health Care: The Managed Outcomes Project Case Study, *Journal of Futures Studies*, vol. 24, issue 3, pp. 51–61.
26. Gitelman, L. D. and Kozhevnikov, M. V. (2018). Paradigm of Managerial Education for a Technological Breakthrough in the Economy. *Ekonomika Regiona – Economy of Region*, vol. 14, issue 2, pp. 433–449.
27. Habets, O., Stoffers, J., Van der Heijden, B. and Peters, P. (2020). Am I Fit for Tomorrow's Labor Market? The Effect of Graduates' Skills Development during Higher Education for the 21st Century's Labor Market. *Sustainability*, vol. 12, issue 18, 7746.
28. Haukka S. (2011). Education-to-work transitions of aspiring creatives. *Cultural Trends*, vol. 20, issue 1, pp. 41–64.
29. Hennigan, R., Jennings, M. and Coleman, M. (2020). Multi Modal Delivery: Preparing Undergraduate Students for the Future of Work. *Proceedings of the 14th International Technology, Education and Development Conference*. Valencia, Spain, pp. 5524–5524.
30. Hernandez-de-Menendez M., Díaz C. E., Morales-Menendez R. (2020). Technologies for the future of learning: state of the art. *International Journal on Interactive Design and Manufacturing*, vol. 14, pp. 683–695.
31. Hocker, J., Schindler, C. and Rittberger, M. (2020). Participatory design for ontologies: A case study of an open science ontology for qualitative coding schemas. *Aslib Journal of Information Management*, vol. 72, issue 4, pp. 671–685.

32. Huang, W. Z., Xie, X. X., Bian W., Zhang, H. (2016). Research on the Novel Education Pattern for Science and Engineering Classes Based on Experiment and Interactive Teaching Method. *Proceedings of International Conference on Education, Management, Computer and Society.* Shenyang, China, pp. 444–447.
33. Ilidzhev, A. A. and Ibragimova, A. N. (2018). Procedural Component of the Didactic System in the Competence-Based Paradigm of Education. *Proceedings of the 4th International Forum on Teacher Education*. Kazan, Russia, pp. 594–601.
34. Inra, J. A., Pelletier, S., Kumar N. L., Barnes E. L., Shields, H. M. (2017). An active learning curriculum improves fellows' knowledge and faculty teaching skills. *Advances in Medical Education and Practice*, vol. 8, pp. 359–364.
35. Ioannidou O. and Erduran S. (2022). Policymakers' Views of Future-Oriented Skills in Science Education. *Frontiers in Education*, vol. 7, article 910128.
36. Kaliuzhna, Y. and Peretiatko, L. (2016). Features of the Development of Future Teachers' Cognitive Motivation in the Process of Teaching Psychological Disciplines. *Science and Education*, vol. 2–3, pp. 125–129.
37. Keller, J., Markmann, C., and von der Gracht, H. A. (2015). Foresight support systems to facilitate regional innovations: A conceptualization case for a German logistics cluster. *Technological Forecasting and Social Change*, vol. 98, pp. 15–28.
38. Khalil, L. and Semono-Eke, B. K. (2020). Appropriate Teaching Methods for General English and English for Specific Purposes from Teachers' Perspectives. *Arab World English Journal*, vol. 11, issue 1, pp. 253–269.
39. Klakurka, J. and Irwin, B. (2016). The Nature and Extent of Foresight-Infused Strategy: A Canadian Organizational Assessment. *Proceedings of the 12th European Conference on Management, Leadership and Governance*. Bucharest, Romania, pp. 133–139.
40. Klowden, K. and Lim, Q. (2021). *Future of work: Insights for 2021 and Beyond*. Milken Institute.
41. Kononiuk, A., Rollnik-Sadowska, E. (Eds.). (2022). *Replay your futures – labs for exploring undiscovered pathways*, Lukasiewicz Research Network – Institute for Sustainable Technologies, Poland.
42. Kruntoradova, M. and Fojtu, K. (2015). Behavioral Diversity of Generation Y Students of Economics-Oriented Fields of Studies – Soft Skills. *Proceedings of the 15th International Scientific Conference on Perspectives of Business and Entrepreneurship Development – Economic, Management, Finance and System Engineering from the Academic and Practioners Views*. Brno, Czech Republic, pp. 41–56.
43. Lalit, M. and Piplani, S. (2019). Active learning methodology – jigsaw technique: An innovative method in learning anatomy. *Journal of the Anatomical Society of India*, vol. 68, issue 2, pp. 147–152.
44. Lauttamaki, V. (2016). ACTVOD-futures workshop – a generic structure for a one-day workshop. *Foresight*, vol. 18, issue 2, pp. 156–171.
45. Lavrentiev, S., Krylov, D. and Korotkov, S. (2017). Interactive Methods as Means of Enhancing the Development of University Students Competitiveness. *Proceedings of the 30th International Business-Information-Management-Association Conference 2017, Vision 2020: Sustainable Economic Development, Innovation Management, and Global Growth,* vols. I-IX. Madrid, Spain, pp. 5560–5565.
46. Liu, Y. and Li, Z. G. (2023). International Research Review and Teaching Improvement Measures of College Students' Learning Psychology under the Background of COVID-19. *Sustainability*, vol. 15, issue 9, 7459.

47. Ma, Y. C. (2023). Using Participatory Teaching in Hands-On Courses: Exploring the Influence of Teaching Cases on Learning Motivation. *Education Sciences*, vol. 13, issue 6, 547.
48. Mainga, W., Murphy-Braynen, M. B., Moxey R., Quddus, S. A. (2022). Graduate Employability of Business Students. *Administrative Sciences*, vol. 12, issue 3, pp. 1–35.
49. Matuszewska-Kubicz, A. (2021). Key competencies in the labour market from the perspective of higher education students. *E-MENTOR*, vol. 5, pp. 69–80.
50. Mendoza, R. D. (2017). Team Based Learning: A Pedagogy for Student Engagement Across Disciplines. *Proceedings of the 11th International Conference on Technology, Education and Development*. Valencia, Spain, pp. 1215–1220.
51. Millar, C. C., Groth, O. and Mahon, J. F. (2018). Management innovation in a VUCA world: Challenges and recommendations. *California management review*, vol. 61, issue 1, pp. 5–14.
52. Miller, R. (2018). *Transforming the future: Anticipation in the 21st century*, UNESCO: France, Routledge, USA.
53. Miller, R. and Sandford, R. (2019). *Futures Literacy: The Capacity to Diversify Conscious Human Anticipation*. In: Poli R. (ed.) *Handbook of Anticipation*, Springer Nature Switzerland.
54. PARP Report. (2020). *Rynek pracy, edukacja, kompetencje. Aktualne trendy i wyniki badań*. Polish Agency for Enterprise Development, Poland.
55. Petru, N. and Marejka, M. (2014). Determinants of Management of the 21st Century, their Impact on Communication and the University Education. *Ad Alta-Journal of Interdisciplinary Research*, vol. 4, issue 2, pp. 30–34.
56. Poteralska B., Łabędzka J., Brożek K. (2022). Identification and Development of Future-Oriented Competences. *Proceedings of the 12th International Scientific Conference "Business and Management 2022"*. Vilnius, Lithuania, pp. 852–858.
57. Rodionov, M. A., Tsarapkina, J. M., Kulagina, J. A., Morozova, I. M. and Tkacheva, N. A. (2021). Formation of students' competitiveness in the VUCA world. *Revista Eduweb*, vol. 15, issue 3, pp. 171–181.
58. Romanenko, Y. N., Solodovnikova, E. and Maksimenko, N. (2023). Microlearning as a new method of teaching soft skills to university students, *Frontiers in Education*, vol. 8, pp. 1–9.
59. Ruza, V. D. and Tortosa, A. J. P. (2019). How to Foster Critical Thinking in the MA Program of Teacher Training and Education: The Debate as a Tool to Re-think Education. *Proceedings of the 12th Annual International Conference of Education, Research and Innovation*. Seville, Spain, pp. 7194–7200.
60. Sala, A., Punie, Y., Garkov, V. and Cabrera Giraldez, M. (2020). *LifeComp: The European Framework for Personal, Social and Learning to Learn Key Competence*, Publications Office of the European Union, Portugal: Lisbon.
61. Sari, M. I., Abdurrahman and Jalmo, T. (2020). The prospective science teaching material based on Integrated-STEM approach: Analysis of teachers and students expectations. *Journal of Physics: Conference Series*, 1572.
62. Scott, A. and Wasti, S. N. (2018). Participant Centred Learning in Management Education: The Case for Learning in Turkey. *Proceedings of the 11th Annual Conference of the EuroMed-Academy-of-Business – Research Advancements in National and Global Business Theory and Practice.* Valetta, Malta, pp. 260–263.
63. Seifert, T. and Bar-Tal, S. (2023). Student-teachers' sense of belonging in collaborative online learning. *Education and Information Technologies*, vol. 28, issue 7, pp. 7797–7826.
64. Serrano, D. R., Dea-Ayuela, M. A., Gonzalez-Burgos, E., Serrano-Gil, A., Lalatsa, A. (2019). Technology-enhanced learning in higher education: How to enhance student engagement

through blended learning. *European Journal of Education. Research, Development and Policy*, vol. 54, issue 2, pp. 273–286.
65. Shvetsova, O. (2019). How to Combine Flip-learning and Problem-based Learning Approaches in One Class: Significant Tools And Methods. *Proceedings of the 11th International Conference on Education and New Learning Technologies*. Palma de Mallorca, Spain, pp. 8602–8608.
66. Silva, G., Correia, A. I. and Oliveira, M. (2019). The Role of Soft Skills in the Tourism Industry and the Challenges for HEI's: The Case of Portugal. *Proceedings of the 9th International Conference on Future of Education*. Florence, Italy, pp. 436–440.
67. Sutton, N. (2002). Why can't we all just get along? *Computing Canada*, vol. 28 issue 16, p. 20.
68. Tillinghast, R. C., Petersen, E. A. and Ur, A. R. (2016). Alternating Learning Methods to Construct K-12 STEM Outreach: Invention and Innovation Workshop Case Study. *Proceedings of the 6th IEEE Integrated Stem Education Conference*. Princeton, USA, pp. 116–119.
69. Tolkacheva, K. (2016). Students Become Experts: Changing the Roles in the Learning Process. *Proceedings of 10th International Technology, Education and Development Conference*. Valencia, Spain, pp. 5553–5558.
70. Vaclavik, M., Tomasek, M., Cervenkova, I., Baarova, B. (2022). Analysis of Quality Teaching and Learning from Perspective of University Students. *Education Sciences*, vol. 12, issue 11.
71. Vaganova, O. I., Korostelev, A. A., Smirnova, Z. V., Abramova, N. S. and Dolmatov, S. N. (2019). Improving teachers' professionalism through the development of creativity, *International Journal of Innovative Technology and Exploring Engineering*, vol. 8, issue 8, pp. 630–634.
72. Verdiyeva, T. (2021). Prospects for the Application of Active Learning Methods in Modern Education. *Revista on line de Politica e Gestao Educacional*, vol. 25, pp.1649–1664.
73. Voogt, J., Erstad, O., Dede, C. and Mishra, P. (2013). Challenges to Learning and Schooling in the Digital Networked World of the 21st Century. *J. Comput. Assist. Learn*, vol. 29, pp. 403–413.
74. Wang, Q. and Liu, J. J. (2020). Teaching for the future: a transnational university practice. *On the Horizon*, vol. 28, issue 2, pp. 85–92.
75. Yarygin, O. N., Korostelev, A. A., Akhmetov, L. G. & Maseleno, A. (2019). Modeling of competence as a tool of goal setting for education in modern society. *International Journal of Recent Technology and Engineering*, vol. 7, issue 6, pp. 72–77.

dr hab. Beata POTERALSKA, prof. UJK
Jan Kochanowski University of Kielce,
Faculty of Law and Social Sciences, Department of Management, Poland