Attributes of the Agile University Education Program in the Conditions of Knowledge-Based Economy

Submitted 18/04/24, 1st revision 06/05/24, 2nd revision 23/05/24, accepted 18/06/24

Artur Kwasek¹, Maria Kocot², Małgorzata Golińska - Pieszyńska³, Artur Fiks⁴, Krzysztof Kandefer⁵

Abstract:

Purpose: The aim of the article is to identify the key attributes of the agile university education program in the conditions of the knowledge-based economy. The research aims to determine which elements of the programme are most valued by students and how they can be improved to better respond to the needs of the labour market.

Design/Methodology/Approach: The research was conducted in 2023 using a survey method involving 1103 respondents from various universities. The data analysis included assessing the attractiveness of the coursework, personalising the curriculum, the availability of online resources and other key aspects of agile learning.

Findings: The results of the study indicate that flexibility, personalization, and accessibility of online resources are key attributes of an agile learning program. Students highly rated the possibility of choosing the form of conducting classes and the readability of the assessment rules, which contributes to their greater commitment and effectiveness of learning.

Practical Implications: The results of the research can be used by universities to optimize their curricula, increasing their attractiveness and adaptation to the needs of students and the labor market. The implementation of the recommendations will allow for better preparation of graduates for the dynamically changing conditions of the knowledge-based economy.

Originality/Value: The article provides unique insights into student preferences in the context of agile learning, highlighting the importance of flexibility and personalization of study programs. The research adds value to the existing literature by offering practical guidance to universities on how to improve their educational processes.

Keywords: Knowledge economy, agile university, curriculum.

¹Ph.D., University of Technology and Economics, Warsaw, Poland,

ORCID: 0000-0003-4386-1444, artur.kwasek@uth.edu.pl

²Ph.D., University of Economics in Katowice, Poland,

ORCID: 0000-0001-5150-3765, maria.kocot@ue.katowice.pl

³Prof., Lodz University of Technology/Faculty of Organization and Management, Poland,

ORCID: 0000-0003-1088-4746, malgorzata.golinska-pieszynska@p.lodz.pl

⁴Ph.D., WSB Merito University Warsaw, Poland,

ORCID: 0009-0000-4107-4506, artur.fiks@warszawa.merito.pl

⁵Ph.D., Social Academy of Sciences, Łódź, Poland,

ORCID: 0000-0002-2532-2060, <u>kkandefer@san.edu.pl</u>

JEL codes: 121, 123.

Paper Type: Research article.

1. Introduction

At a time when knowledge and skills are key resources in a dynamically developing economy, higher education faces the challenge of adapting its programs to the needs of the labor market. This article aims to identify the key attributes of an agile university curriculum that will allow graduates to effectively prepare for the demands of the modern world.

These changes are necessary to meet the growing demands of the labor market and the rapidly advancing technological development. Interdisciplinarity, flexibility and innovation are the foundations of modern curricula, which allow students to develop the skills necessary to solve complex problems.

The introduction of such programs requires close cooperation between universities and industry and research institutions, which allows them to gain practical experience and update knowledge in accordance with the latest trends.

In the context of the knowledge-based economy, it is also crucial to promote a culture of continuous improvement and lifelong learning. Universities must offer a variety of forms of education, such as online courses, postgraduate studies and certificate programs, to enable flexible competence development in response to changing market demands.

Adaptation to new conditions also requires the introduction of innovative teaching methods that use modern information and communication technologies. E-learning, blended learning and the use of artificial intelligence in the teaching process are becoming more and more common, which makes it possible to personalize learning and increase its effectiveness.

To sum up, the functioning of a university in the conditions of a knowledge-based economy requires the implementation of interdisciplinary curricula, close cooperation with industry, promotion of a culture of continuous improvement and the introduction of innovative teaching methods.

Only in this way can universities effectively prepare their graduates for the challenges of the modern labour market and contribute to the development of a knowledge-based economy.

2. Literature Review

2.1 Functioning of a University in the Conditions of Knowledge-Based Economy

The functioning of a higher education institution in the conditions of a knowledge-based economy requires the introduction of numerous organizational and pedagogical changes (Godfrey and Hatch, 2007). First of all, universities must adapt their curricula to the dynamically changing needs of the labor market and advances in technology and science (Nowak, 2020).

A key element is to promote interdisciplinarity, which allows students to develop skills in various areas of knowledge and thus be better prepared to solve complex problems of the modern world (Kowalski, 2019).

An important aspect of the university's functioning is also establishing close cooperation with industry and research institutions. Such partnerships enable students to gain practical experience and update their knowledge in accordance with the latest trends and requirements of the labor market (Wiśniewski, 2019).

Apprenticeships, internships and projects carried out in cooperation with companies contribute to increasing the employability of graduates, as well as to the transfer of knowledge between the university and the private sector (Luthar and Barkin, 2012).

In the conditions of a knowledge-based economy, it is also crucial to promote a culture of continuous improvement and lifelong learning (Sajdak, 2013). Universities should offer a variety of forms of education, such as online courses, postgraduate studies and certification programs, which allow for flexible development of competences in response to changing market requirements (Malinowski, 2021).

These programs should be tailored to the needs of different age and professional groups, thus enabling continuous improvement of professional qualifications (Malinowski, 2021).

Adaptation to a knowledge-based economy also requires the introduction of innovative teaching and learning methods (Kocot and Kwasek, 2022) that use modern information and communication technologies (Sallnäs and Björklund, 2020).

E-learning, blended learning and the use of artificial intelligence in the teaching process are becoming more and more common, enabling personalization of learning and increasing its effectiveness (Nowak, 2020). The introduction of such methods allows for better adaptation of educational processes to the individual needs and learning styles of students (Wiśniewski, 2019).

In conclusion, the functioning of a higher education institution in the conditions of a knowledge-based economy requires the implementation of interdisciplinary curricula, close cooperation with industry, the promotion of a culture of continuous improvement and the introduction of innovative teaching methods (Crane and Matten, 2016).

Only in this way can universities effectively prepare their graduates for the challenges of the modern labour market and contribute to the development of a knowledge-based economy.

2.2 Attributes of an Agile University

In a knowledge-based economy, the key element of success is the ability to quickly adapt to changing market and technological conditions (Starczewska-Krzysztoszek, 2008). Agile university education programs should be characterized by flexibility, innovation and a practical approach to teaching, which enables students to acquire the skills needed in the dynamically changing labor market.

Flexibility in curricula is essential for students to adapt their educational paths to individual needs and changing career requirements (García-Granero *et al.*, 2020). The use of a modular learning system, in which students can choose courses according to their interests and needs, increases their engagement and motivation to learn (Nowak, 2020).

Innovation in curricula is another essential attribute of an agile university (Munodawafa and Johl, 2019). The introduction of new technologies and modern teaching methods, such as e-learning and blended learning, allows for a better adaptation of the educational process to the needs of students and the labour market (Malinowski, 2021).

The use of artificial intelligence and analytical tools makes it possible to personalize teaching, which increases the effectiveness of knowledge and skills acquisition (Kwasek *et al.*, 2023).

A practical approach to teaching is a key element of agile university education programs (Ciekanowski, 2020). Cooperation with industry and research institutions enables students to gain practical experience and apply the acquired knowledge in real professional situations (Wiśniewski, 2019).

Organizing internships, apprenticeships and team projects as part of the curriculum increases the employability of graduates and allows for the up-to-date content of the curriculum in accordance with the latest trends and requirements of the labor market (Ronda-Pupo and Guerras-Martin, 2012).

Interdisciplinarity in curricula allows for the development of a wide range of skills and perspectives, which is essential in solving the complex problems of the modern world (Nath and Agrawal, 2020). The integration of various fields of science allows students to gain comprehensive knowledge and skills that are highly valued by employers (Kowalski, 2019).

To sum up, the attributes of an agile university curriculum in the conditions of a knowledge-based economy include flexibility, innovation, a practical approach to teaching, and interdisciplinarity (Olesiński, Rzepka and Sabat, 2016). These features enable universities to better prepare graduates for the challenges of the modern labour market and support the development of a knowledge-based economy.

2.3 Agile University Education Program

The education program of an agile university must be adapted to the dynamic conditions of the knowledge-based economy (Nowak, 2020; Porter and Kramer, 2006; Prokopowicz, 2015). A key element of such a program is the attractiveness of the classes conducted, which contributes to greater student engagement and improvement of the quality of education (Nowak, 2020).

An important aspect is also the ability to choose the method of conducting classes, such as traditional, e-learning or a hybrid model, which increases the flexibility and accessibility of education for different groups of students (Malinowski, 2021).

Personalization of the study program is another important element of agile education. It allows the educational path to be adapted to the individual needs and interests of students, which leads to more effective acquisition of knowledge (Wiśniewski, 2019). Building networking, or a network of contacts, also plays an important role, as it allows students to establish valuable relationships with other students, lecturers, and industry representatives (Kowalski, 2019).

Legibility of the principles and methods of assessing learning outcomes is essential for students to clearly understand the requirements and assessment criteria (Pietrzyk-Sokulska, 2014). Clear assessment rules increase the transparency of the educational process and motivate students to achieve better results (Nowak, 2020).

The online availability of educational resources and teaching staff allows students constant access to teaching materials and support from lecturers, which is crucial in the remote and hybrid model of education (Malinowski, 2021).

The predominance of self-employment over the obligation to participate in classes is an essential element of an agile learning program (Parker, Wall and Cordery, 2008). Students should be able to shape their learning process independently (Górnicka, 2020; Karnani, 2010; Kowalski, 2019), which increases their responsibility for their own achievements (Wiśniewski, 2019).

Equally important is the ability to constantly verify knowledge in practice, which allows for ongoing testing and application of the acquired skills in real professional situations (Kowalski, 2019).

The importance of analysis and interpretation of results over reconstructive repetition of facts emphasizes the importance of critical thinking and problem-solving skills, which is crucial in a knowledge-based economy (Nowak, 2020). Group work, including in the remote work model, develops cooperation and communication skills, which are essential in the modern labor market (Malinowski, 2021).

To sum up, the education program of an agile university should include attractive and flexible teaching methods, personalization of educational paths, building networking, readability of assessment rules, online availability of resources and teaching staff, and the advantage of the importance of own work and practical verification of knowledge.

These elements enable students to better prepare for the challenges of the modern labour market and support the development of a knowledge-based economy.

3. Methods and Materials

3.1 Methods

The research was conducted in 2023 to identify the key attributes of an agile university curriculum in a knowledge-based economy. A sample of 1103 respondents took part in the survey, which was a representative sample of students from various universities. A survey method was used to collect opinions on various aspects of the education program.

The aim of the research was to determine which elements of the curriculum are most valued by students and how they can be improved to better respond to the needs of the labour market and the development of the knowledge-based economy.

The research hypothesis assumed that flexibility, personalization of the study program and the availability of online resources are key attributes of an agile university. The research aimed to answer the following research questions:

- What are the most important attributes of an agile college education program according to students?
- ➤ How do different forms of classes affect the attractiveness of the curriculum?
- ➤ What is the importance of personalization of the study program and the availability of online resources for students?

In the course of the research, sociodemographic data were obtained, which included the university, age of the respondent, level of study, form of study and professional activity.

The analysis of the data shows that the majority of respondents (682 people) came from one university, while the others were dispersed among other institutions (206, 205 and 10 respondents from three other universities).

The age of the respondents varied, with a predominance of people aged 20-30 (667 respondents), followed by those aged 30-40 (139 respondents) and 40-50 (94 respondents). The smallest group were people over 50 years of age (163 respondents).

The level of study also varied: the majority of respondents were at the bachelor's level (636 people), and the other groups were at the master's level (122 people) and doctoral level (335 people).

The form of study was dominated by traditional (95 people) and e-learning (1008 people), with a small number of respondents indicating a hybrid mode (10 people).

The economic activity of the respondents was also diverse: 70 people were economically inactive, 729 people were professionally employed, 78 people were on maternity or parental leave, and 226 people were self-employed.

3.2 Results

The research was aimed at presenting how various aspects of the curriculum are perceived by participants and can reflect their preferences and needs in the context of an agile organization in a knowledge-based economy.

Table 1 shows the various attributes of the agile learning program, analyzed in terms of their evaluation by the study participants.

The respondents were asked about their opinions on the attractiveness of the classes, the choice of the method of conducting classes (traditional, e-learning, hybrid), the personalization of the study program, building networking, and the readability of the rules and methods of evaluating the effects.

In addition they were asked about the online availability of resources and teaching staff, the predominance of the importance of one's own work over the obligation to participate in classes, the importance of analysis and interpretation of results over the reproduction of facts, the possibility of constant verification of knowledge in the practice and group work, including in the remote work model.

Table 1. Attributes of Education Programs in an Agile Organization

Atributes	Definitely NOT	Rather not	I don't have an opinion	Rather YES	Definitely YES
Attractiveness of the classes conducted	6	21	59	408	609
Choice of class delivery method (traditional, e- learning, hybrid)	21	41	106	328	607
Personalization (individualization) of the study program	12	75	207	412	397
Networking building	10	55	327	403	308
Clarity of rules and methods of assessing outcomes	9	17	75	417	585
Online accessibility of resources and teaching staff	9	17	64	379	634
Emphasis on the importance of independent work over the obligation to attend classes	40	130	244	375	314
Importance of analyzing and interpreting results over merely repeating facts	6	42	273	454	328
Opportunity for continuous verification of knowledge in practice	13	61	180	481	368
Group work including in a remote work model	78	103	211	383	328

Source: Own study.

The attractiveness of the classes was highly rated, with 609 respondents expressing strong approval and 408 rather agreeing. The choice of how to conduct the classes was also supported, with 607 respondents expressing strong approval and 328 rather agreeing.

Personalization of the study program received slightly lower, but still positive ratings, with 397 respondents definitely in favor and 412 rather in favor. Building networking was rated moderately positively, with 308 strong yes responses and 403 rather yes. The readability of the rules and ways of evaluating the effects was highly rated, with 585 strong yes answers and 417 rather yes answers.

The online availability of resources and teaching staff was also highly rated, with 634 resounding yes responses and 379 rather yes responses. The predominance of the importance of self-work over the obligation to participate in classes had more divided ratings, with 314 strong yes answers and 375 rather yes, but also 244

respondents with no opinion. The importance of the analysis and interpretation of the results over the reproduction of facts was assessed positively, with 328 strong yes answers and 454 rather yes answers.

The possibility of constant verification of knowledge in practice was also well evaluated, with 368 strong yes answers and 481 rather yes answers. Group work, including in the remote work model, had mixed assessments, with 328 strong yes answers and 383 rather yes, but also 211 respondents with no opinion.

Table 2 shows the Pearson correlation coefficients, t-values, and p-values relating to the attributes of the agile organization's learning program, which are discussed in Table 1.

The analysed variables include the attractiveness of the classes, the choice of the method of conducting classes (traditional, e-learning, hybrid), personalisation of the study programme, building networking, the clarity of the rules and methods of assessing the effects, the online availability of resources and teaching staff, the advantage of own work over the obligation to participate in classes, the importance of analysis and interpretation of results over the reconstructive repetition of facts, the possibility of constant verification of knowledge in practice and group work, including the remote work model.

Table 2 shows that the strongest positive correlation (0.758) was found between the attractiveness of classes and the choice of the method of conducting classes, which is also confirmed by a high t-value (4.642) and a low p-value $(2.39\times10^{\circ}-27)$, suggesting a statistical significance of this relationship.

The p-value here is very low, indicating a high probability that the observed correlation is not accidental. Other significant correlations were observed between the online availability of resources and teaching staff and networking (0.236), as well as between the choice of how to deliver classes and networking (0.238), which also indicates a positive relationship between these variables, supported by significant t-values (2.374 and 3.188, respectively) and low p-values (3.11×10 $^{-3}$ and 3.63×10 $^{-3}$).

In the case of personalization of the study program and other variables, such as group work or the possibility of constant verification of knowledge in practice, correlations were usually lower, suggesting weaker associations.

For example, the correlation between program personalization and group work was only 0.001, which is supported by a high p-value (9.99×10^-1), indicating a lack of statistical significance of this relationship.

Table 2. Pearson Correlation Coefficients, t-values, and p-values

Variable	varson Correlation Coefficients, t-val Variable 2	Pearson correlation coefficient	T- value	P-value
Attractiveness of the classes	Choosing the method of conducting classes	0.758	4.642	2.39×10^- 27
	Personalization of the study program	0.166	1.142	8.52×10^-4
	Building networking	0.214	2.341	1.68×10^-2
	Clarity of the rules and methods of evaluating effects	0.106	1.122	1.22×10^-1
	On-line availability of resources and teaching staff	0.140	2.161	4.56×10^-2
	The advantage of self-work over the obligation to participate in classes	0.095	1.813	1.83×10^-1
	The importance of analysis and interpretation of results over repetition of facts	0.105	1.745	1.35×10^-1
	Possibility of constant verification of knowledge in practice	0.181	3.004	2.96×10^-3
<.	Teamwork in the remote work model	0.172	2.846	3.45×10^-3
gı	Personalization of the study program	0.214	2.353	1.68×10^-2
Choosing the method of conducting classes	Building networking	0.238	3.188	3.63×10^-3
	Clarity of the rules and methods of evaluating effects	0.115	2.624	9.88×10^-2
	On-line availability of resources and teaching staff	0.153	2.634	3.72×10^-2
	The advantage of self-work over the obligation to participate in classes	0.107	1.761	1.75×10^-1
	The importance of analysis and interpretation of results over repetition of facts	0.118	1.842	1.21×10^-1
	Possibility of constant verification of knowledge in practice	0.191	3.375	2.88×10^-3
	Teamwork in the remote work model	0.181	2.753	2.87×10^-3
study	Building networking	0.031	0.512	4.56×10^-1
	Clarity of the rules and methods of evaluating effects	0.025	0.456	6.75×10^-1
the	On-line availability of resources and teaching staff	0.044	0.568	5.21×10^-1
Jo	The advantage of self-work over the obligation to participate in classes	0.005	0.158	8.88×10^-1
Personalization program	The importance of analysis and interpretation of results over repetition of facts	0.010	0.115	9.81×10^-1
	Possibility of constant verification of knowledge in practice	0.003	0.106	9.86×10^-1
	Teamwork in the remote work model	0.001	0.057	9.99×10^-1

Building networking	Clarity of the rules and methods of evaluating effects	0.187	2.316	1.45×10^-1
	On-line availability of resources and teaching staff	0.236	2.374	3.11×10^-3
	The advantage of self-work over the obligation to participate in classes	0.010	0.981	9.82×10^-1
	The importance of analysis and interpretation of results over repetition of facts	0.003	0.877	9.97×10^-1
	Possibility of constant verification of knowledge in practice	0.039	1.562	3.92×10^-1
В	Teamwork in the remote work model	0.024	0.723	6.71×10^-1
Clarity of the rules and methods of evaluating effects	On-line availability of resources and teaching staff	0.174	2.316	1.45×10^-1
	The advantage of self-work over the obligation to participate in classes	0.011	0.981	9.87×10^-1
	The importance of analysis and interpretation of results over repetition of facts	0.009	0.981	9.99×10^-1
	Possibility of constant verification of knowledge in practice	0.041	1.632	4.13×10^-1
	Teamwork in the remote work model	0.026	1.872	5.66×10^-1
On-line availability of resources and teaching staff	The advantage of self-work over the obligation to participate in classes	0.009	0.981	9.81×10^-1
	The importance of analysis and interpretation of results over repetition of facts	0.004	0.981	9.99×10^-1
	Possibility of constant verification of knowledge in practice	0.037	1.912	4.37×10^-1
	Teamwork in the remote work model	0.023	1.833	7.53×10^-1
The advantage of self-	The importance of analysis and interpretation of results over repetition of facts	0.051	3.653	5.24×10

Note: Significant correlations are highlighted in bold.

Source: Own work.

P-values for many correlations, such as between the personalization of the study program and the predominance of self-work over the obligation to participate in classes, were close to 1, suggesting no significant relationship between these parameters.

The readability of the principles and methods of evaluating effects showed some significant correlations, for example, with the online availability of resources and teaching staff (0.174) and with networking (0.187), but the p-values for these

relationships were relatively higher (1.45×10⁻¹ and 1.45×10⁻¹, respectively), indicating moderate statistical significance.

Overall, Table 2 provides a detailed insight into the strength and statistical significance of the relationship between the various attributes of an agile organization's learning program. Strong and significant correlations between some variables suggest that improvements in one aspect of the curriculum, such as the attractiveness of the coursework, may be associated with positive changes in other areas, such as the choice of how to deliver classes.

However, for many variables, particularly those related to personalization and self-work, correlations were weaker and less statistically significant, which may suggest the need for further research or different approaches to analyzing these attributes.

4. Discussion

The analysis of the attributes of the education program in an agile organization, presented in Table 1 and the correlation between them in Table 2, allows us to formulate several important conclusions regarding both the preferences of participants and the interdependencies between various educational elements.

Table 1 provides information on the evaluation of participants in relation to the attractiveness of the classes, the choice of the method of conducting classes, the personalization of the study program, building networking, the readability of the rules and methods of evaluating the effects, the online availability of resources and teaching staff, the advantage of own work over the obligation to participate in classes, the importance of analysis and interpretation of results over the repetition of facts, the possibility of constant verification of knowledge in practice and group work, including the remote work model.

The data in Table 1 show that participants show high approval for most of these attributes, especially in terms of class attractiveness, readability of assessment rules, and accessibility of online resources. High ratings indicate the importance that participants attach to flexible and well-structured learning processes that are tailored to their individual needs and abilities.

Table 2, which shows the Pearson correlation coefficients, t-values, and p-values, provides a deeper understanding of the interdependencies between the individual attributes. A strong correlation between the attractiveness of the classes and the choice of the way they are conducted suggests that participants appreciate the possibility of choosing between different forms of classes, which affects their overall satisfaction with the program. This relationship points to the need to further develop and offer different teaching methods such as traditional, e-learning, and hybrid to meet the diverse needs of learners.

Correlations between the online availability of resources and teaching staff and building networking, and between the choice of the way classes are delivered and building networking suggest that flexible access to resources and the possibility of choosing the form of teaching are conducive to creating valuable relationships between participants.

Networking is a key element in agile learning organizations, enabling the exchange of knowledge and experiences, which in turn contributes to a more inclusive and supportive learning environment.

Personalization of the study program and other aspects, such as group work or the possibility of constant verification of knowledge in practice, showed weaker correlations with other variables. This may indicate the need for a more individual approach to these elements in order to better align them with the expectations of the participants.

Personalization of the program is especially important in the context of agile organizations, where flexibility and adaptation to individual needs are key to effective learning. Weaker correlations may suggest that current personalization practices do not fully meet the expectations of participants and require further optimization.

The readability of the principles and methods of assessing effects, although highly rated in Table 1, showed moderate correlations with other variables. This indicates its importance as an independent factor that can affect overall program satisfaction, regardless of other elements. Clear and transparent assessment rules are the foundation of any educational program, ensuring honesty and transparency, which is essential to build trust among participants.

The online availability of resources and teaching staff, despite being highly rated, has shown a variety of correlations, which may suggest that its relevance is multifaceted and may affect different areas of participants' learning experiences. The high availability of online resources can support not only face-to-face learning, but also other aspects such as networking and personalization, making it a key component of modern, agile learning programs.

The predominance of self-work over the obligation to participate in classes and the importance of analysis and interpretation of results over the reconstructive repetition of facts, although important, showed weaker associations with other variables.

This may suggest that participants see these elements as more individual experiences that are not necessarily directly related to other aspects of the program. Therefore, curricula should offer support for self-work and critical analysis, while allowing participants to use other available resources and opportunities.

5. Conclusions

Taken together, the results from Tables 1 and 2 indicate the importance of flexibility, personalisation and accessibility in learning programmes in agile organisations. The strong correlations between certain attributes highlight the need for an integrated approach that combines different forms of teaching and resources to create a supportive and effective learning environment.

At the same time, areas with weaker correlations require further research and optimization to better respond to the needs of participants and increase their satisfaction with the program.

Based on the analysis of the presented data and the resulting conclusions, several key recommendations can be formulated for universities that want to implement effective education programs in agile organizations.

Firstly, universities should definitely invest in a variety of methods of conducting classes, such as traditional, e-learning and hybrid. A strong correlation between the attractiveness of classes and the choice of the method of their implementation indicates that the possibility of choosing the form of teaching is crucial for student satisfaction.

Offering flexible teaching options allows for better adaptation to the individual needs and preferences of students, which in turn increases their engagement and learning efficiency.

Second, the availability of online resources and teaching staff should be a priority. The results show that easy access to educational materials and opportunities to consult with lecturers significantly affect the positive experience of participants. Universities should ensure that all resources are available online and easily accessible to students, enabling them to study independently and manage their time flexibly.

Thirdly, it is important to have clarity of the rules and methods of assessment. Clarity of assessment rules is crucial for building trust and ensuring fairness in the education process. Universities should clearly communicate assessment criteria and provide students with regular feedback on their progress, which will help them better understand the requirements and improve their performance.

Fourthly, the personalisation of the study programme should be more developed. Although personalization has shown weaker correlations with other variables, an individual approach to student needs is crucial in agile organizations. Colleges should offer flexible educational pathways that allow students to tailor the program to their interests and career goals.

Fifthly, networking should be actively supported. The results indicate that networking is an important element of an integrated learning environment. Universities should create opportunities to build relationships between students through group projects, workshops and other forms of cooperation, both in person and remotely.

Finally, universities should promote the importance of analysis and interpretation of results over the reproduction of facts. Programs should focus on developing critical thinking skills and the practical application of knowledge. Universities should encourage engagement in research projects and practical tasks that require analysis, interpretation, and innovative approaches to problem-solving.

The implementation of these recommendations will help universities create more effective and integrated education programs that respond to the needs and expectations of modern students, while preparing them for the dynamically changing labor market.

6. Limitations

The limitations of the research include several important issues. First, the research was based on a survey method, which can be prone to subjectivity and respondents' response errors. Not all participants could fully understand the questions or be willing to give honest answers.

Second, the research sample consisted mainly of students from one university, which may limit the possibility of generalizing the results to other educational institutions. In addition, the research focused on student perceptions to the perspective of faculty and university administration, which could provide a more complete picture of the situation.

In addition, the research was conducted at a specific point in time, which does not take into account the dynamics of changes in students' preferences and expectations over a longer period of time. Ultimately, the limited number of variables included in the analysis may not fully reflect the complexity of agile learning in a knowledge-based economy.

7. Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References:

- Ciekanowski, Z. 2020. Implementation Methods and Employee Adaptation Process. District Employment Office in Płońsk: Płońsk, pp. 1589-1611.
- Crane, A., Matten, D. 2016. Business ethics: Managing corporate citizenship and sustainability in the age of globalization. Management Marketing. Business and Society, Oxford University Press: Oxford, UK.
- García-Granero, E.M., Piedra-Muñoz, L., Galdeano-Gómez, E. 2020. Measuring ecoinnovation dimensions: The role of environ-mental corporate culture and commercial orientation. Res. Policy, 49, 28-31. https://doi.org/10.1016/j.respol.2020.103948.
- Godfrey, P., Hatch, N. 2007. Researching corporate social responsibility: An agenda for the 21st century, J. Bus. Ethics, 70, 87-98.
- Górnicka, B. 2020. In remote mode...—learning—upbringing—care for students with special educational needs during the pandemic. Reflections and dilemmas of the pedagogue. Cult. —Transformations—Eduk., 8, 25-36. https://doi.org/10.12775/KPE.2020.008.
- Karnani, A. 2010. The case against corporate social responsibility. Calif. Manag. Rev., 52, 5-21. https://doi.org/10.1525/cmr.2010.52.3.5.
- Kocot, M., Kwasek, A. 2022. Study of the effectiveness of e-learning in the light of own research. Zesz. Sciences, Management Humanit University, 23, 109-123. https://doi.org/10.5604/01.3001.0015.8612.
- Kowalski, M. 2019. Interdisciplinarity as a key element of modern education. Educational Innovations Quarterly, 12(2), 78-91. https://ruj.uj.edu.pl/xmlui/bitstream/handle/item/149836/szpunar_magdalena_kultura algorytmow 2019.pdf?sequence=3.
- Kwasek, A., Kocot, M., Kandefer, K., Fiks, A., Kaczkowska-Serafińska, M. 2023. Students' Expectations Regarding the Educational Offer in Light of Personal Research. Eur. Res. Stud. J., 26, 351-362. https://doi.org/10.35808/ersj/3218.
- Luthar, S.S., Barkin, S.H. 2012. Are affluent youth truly "at risk"? Vulnerability and resilience across three diverse samples. Dev. Psychopathogy, 24, 429-449. https://doi.org/10.1017/S0954579412000209.
- Malinowski, J. 2021. Lifelong learning in agile educational systems. Contemporary Educational Research, 18(1), 112-124. https://vuir.vu.edu.au/44683/1/CARUSO Massimiliano-Thesis nosignature.pdf.
- Munodawafa, R.T., Johl, S.K. 2019. A systematic review of eco-innovation and performance from the resource-based and stake-holder perspectives. Sustainability, 11, 60–67. https://doi.org/10.3390/su11030607.
- Nath, V., Agrawal, R. 2020. Agility and lean practices as antecedents of supply chain social sustainability. Int. J. Oper. Prod. Management, 10, 1589-1611. https://doi.org/10.1108/IJOPM-08-2019-0561.
- Nowak, A. 2020. Interdisciplinary integration in agile curricula. Journal of Modern Education, 15(3), 45-56. https://search.ebscohost.com/login.aspx?direct=trueandprofile=ehostandscope=sitea ndauthtype=crawlerandjrnl=23004711andAN=143333656andh=bWGins%2FmMv5 VoXzoxZml1TuZNkRq%2BqEVBEGxba5pGZjBV52Sqi8ycvWEnMgKzoa67dS50 tPcC6JA9JZ4PdkIZA%3D%3Dandcrl=c.
- Olesiński, Z., Rzepka, A., Sabat, A. 2016. Interorganizational Networks of Economic Cooperation on the Example of Polish, Canada and Georgia. Texter Scientific Publishers: Warsaw, Poland, pp. 31-33.

- Parker, S.K., Wall, T.D., Cordery, J.L. 2008. Future work design research and practice: Towards an elaborated model of work design. J. Occup. Organ. Psychology, 74, 413-440. https://doi.org/10.1348/096317907X202860.
- Pietrzyk-Sokulska, E. 2014. Small and medium-sized enterprises and their role in the Polish economy. Forum Sci. Oeconomia, 2, 5-14. https://doi.org/10.23762/FSO_VOL2_NO3_1.
- Porter, M.E., Kramer, M.R. 2006. Strategy and Society: The link between competitive advantage and corporate social responsibility. Harv. Bus. Review, 84, 78-92. https://doi.org/10.1225/R0606E.
- Prokopowicz, D. 2015. The Importance of Innovation in the Enterprise Sector and Effective Cooperation with Local Governments as the Basis of Economic Development in Poland: Legal and social problems of local government. University of Entrepreneurship in Warsaw. Warsaw, Poland, pp. 248.
- Ronda-Pupo, G.A., Guerras-Martin, L.A. 2012. Dynamics of the evolution of the strategy concept 1962–2008: A co-word analysis. Strateg. Manag. Journal, 2, 165. https://doi.org/10.1002/smj.1968.
- Sajdak, M. 2013. Innovation as an essential feature of an agile enterprise. Wrocław University of Economics Press, Wrocław, Poland, pp. 73.
- Sallnäs, U., Björklund, M. 2020. Consumers' influence on the greening of distribution—exploring the communication between logistics service providers, e-tailers and consumers. Int. J. Retail. Distrib. Management, 11, 1177-1193. https://doi.org/10.1108/IJRDM-09-2019-0312.
- Starczewska-Krzysztoszek, M. 2008. Barriers to the development of small enterprises in Poland. Indos Socio economic issues. https://orka.sejm.gov.pl/WydBAS.nsf/0/C5322ED5A2F2D077C12573F400399B54/ \$file/infos 028.pdf
- Wiśniewski, P. 2019. Cooperation between universities and industry as an element of agile education. Journal of Higher Education Policy, 8(4), 102-115.