EDUCATION, ECONOMY, AND AI: MULTIDISCIPLINARY PERSPECTIVES FOR A DIGITAL FUTURE

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EDUCATION, ECONOMY, AND AI: MULTIDISCIPLINARY PERSPECTIVES FOR A DIGITAL FUTURE

Monograph

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2.5. Design thinking as an innovative technology for creating an informational tourism product

Market conditions demand active participation of individuals as the main subjects of socio-economic development, intensification of modern information and communication tools, expansion of opportunities for individual communication within network systems, wider engagement of the youth in the provision of digital services, and improvement of digital innovative infrastructure at both state and local levels.

Therefore, the main task of innovative education in the 21st century is not only the understanding of the laws of nature and society but also the personal and activity-based mastery of a humanitarian methodology for creatively transforming education and harmonizing the relationship between "human-nature-society." Culture is seen as the measure of the 'humaneness' of a societal human, and the universal mechanism for transmitting cultural norms is the education system.

The issue of implementing ICT technologies in the educational environment as an imperative for modernizing education, according to V. Kremen (2017), is primarily associated with fundamentally new requirements and challenges of the modern information society for the quality of competitive specialist training. The scholar emphasizes the integrative potential of computerization as an essential component of modern scientific and technological progress, which combines with a broad sociocultural and philosophical approach to reality, as it is the first time in intellectual culture that a real possibility of synthesizing the humanities and natural sciences with all types of creative activities has emerged (Кремень, 2017, p. 3-9).

The powerful impact of the global information and communication space on the entire system of universal human culture leads to a sharp change in the nature of dialogue between cultures, creating prerequisites for their closure in a global communicative existence, loss of stability, and depersonalization of society.

R. Kis (2005), considering the sociocultural space in the context of the interaction between the global and local as glocalization (a counter-movement of sense forms, sign systems, and ways of communication), emphasizes: "Without constant living interpretation and reinterpretation, there is no continuity of cultural traditions, the actual continuity of culture is disrupted, corresponding discourses degrade and disintegrate, sociocultural meanings devalue and dissipate..." (Кісь, 2005, p. 7-8).

G. Ball's (2014) view on the culture-creating function of psychological science is consonant, which anticipates the analysis of culture as a fundamental category of anthropology, personality – as an embodiment of culture (including its creative side) in a human individual, and education – as a purposeful introduction of individuals to culture (Балл, 2014, p. 7).

Scientific research on the state of the anthropological problem "human-nature-society," examining the concepts of mutual influence between the geosystem and the human psychosystem, analysis of various aspects of the organization of one's personal and individual space: symbolic, communicative, mythological, visual, event-related, etc., are acutely demanded issues of modernity. This particularly concerns the development and implementation of the innovative method of design thinking in the educational process for preparing future tourism industry specialists.

The aim of the article is the theoretical analysis and empirical study of design thinking as an innovative method in the preparation of competitive future tourism industry specialists in the conditions of digitalization.

The accelerated dynamics of contemporary sociocultural educational processes is characterized by the intensive introduction of innovations as potential sources of individual and social group development, improving their adaptive capacities to changing environmental conditions, which contain a vast range of tangible and virtual content.

Virtuality, as one of the fundamental components of the modern world, penetrates all spheres of social life and becomes increasingly attractive to the "computer generation" compared to real existence. In the commonly accepted sense, virtual reality refers to any interactive activity in a computer network. Scholars note that the new artificial environment "scans" and accepts only the informational aspect of a person, introducing them as a whole being into a state of crisis concerning previous sensations. By its nature and trends, this environment is posthuman. A person in a virtual environment is entirely different, distinct from the images and representations filled in education, upbringing systems, morality, and literature recommended for acquiring humanistic worldview orientations.

The acquisition of informational and digital competence by educational space participants involves the confident and critical application of information and communication technologies (ICT) for creating, searching, processing, exchanging information in work, public space, and private communication (Башкевич, & Носенко, 2018; Даценко, & Остроух, 2013; Карти Google; MediaSapiens, 2019).

The information paradigm anticipates fundamentally new functions of education and changes the roles of all educational process participants within an informational-communicative learning environment, associated with the anticipatory nature of modern education that prepares future specialists for independently acquiring necessary information and developing the ability to apply it in turbulent conditions (Купач, 2013; Міхєєв та ін., 2015; Google Developers).

For centuries, the way of life was determined by the territorial location of a society, including the natural landscape conditions and the culturally-traditional norms of the compactly residing ethnic group. Every environment consists of a vast array of tangible and virtual content, which can be part of a human's life structure in various functional places of activity.

Yu. Shvalb (2013), the developer of the ecopsychological approach, proposes to consider the following construct of subject systems:

1) cultural environment as a system of cultural scripts and worldviews forming the sphere of societal consciousness;

2) natural-landscape environment as a system of natural conditions directly affecting the organization of life, lifestyle, and thinking of people;

3) educational environment as a system of teaching and education ensuring the processes of reproduction and "production of human material";

4) domestic environment as a system of direct life support (Швалб, 2013, p. 13).

Our research has shown that revealing the interconnection between psychological and geographical factors and their impact on the eco-consciousness and behavior of a growing individual in the context of humanistic psychology and humanitarian geography is a determinant for expanding the culture-creating mental space of all participants in educational-pedagogical interaction. This creates an eco-mental environment that is safe and creatively developmental for children and youth based on interdisciplinarity and partnership pedagogy. In the process of social partnership, the task was to enhance eco-psycho-geographical literacy and the comprehensive training of a motivated teacher as a social facilitator, mentor, coach, and partner for the student youth towards creating an ethnopsycho-cultural landscape in the educational institution, implementing innovative-interactive measures, applying ICT innovations, forming eco-consciousness and an egalitarian worldview in the younger generation, providing active social support for youth and their self-realization in developing the social infrastructure of territorial communities, educational institutions, youth centers, etc. (Кікінежді та ін., 2024a; Kikinezhdi et al., 2024; Vasylkevych et al., 2020).

Modern tourism enterprises operate under conditions of intense competition, globalization, and reorganization aimed at expanding their activities, gradually reducing the share of travel agencies and reselling tourist products, increasing the share of their sales directly to consumers through online networks and remotely, increasing the role of marketing and active product promotion in the market through

innovative promotion means (information technology), dynamic development of online booking and internet advertising, which requires quick response, flexibility in operations, and changes in marketing policy (Любіцева, 2003).

The highest value of knowledge in the field of tourism is its usefulness to a potential tourist who encounters problems and inconveniences during travel. Using design thinking as a particular method for creating products and services where focus is on the person, their needs, and interests allows for providing quality services to tourists, consumers, users, and contributes to the development of soft skills in tourism, emotional and social intelligence, creative and critical thinking, etc. (Геоінформаційна система міста; Hard skills і Soft skills або як стати професіоналом в туризмі?).

Design Thinking is an approach to solving real-world problems, a method that provides the foundations for addressing problem-solving that takes into account user needs, their experience, and emotions.

The basis of the concept of our study was the idea of design thinking, formulated by H. Simon in 1969 in the book "The Sciences of the Artificial." This later developed by scientists at Stanford University when, under the guidance of R. McNamara, a group of researchers created an interdisciplinary course on Design Thinking aimed at solving human problems and founded the Stanford d.school, which promotes the idea of design thinking (Cross, 2013).

The course was based on the ideas of the American psychologist A. Maslow (1943), who developed the theory of needs as internal sources of human activity and approaches to personal self-realization. According to the scientist's concept, the proper adoption of social norms and values by an individual and the formation of personality can only be realized in the main activity that ensures the development of needs (Maslow, 1943).

Foreign researchers see design thinking primarily as a tool for solving problematic tasks, generating new ideas and solutions, creating innovative products,

etc. Notably, B. Barnett and D. Evans (2016) emphasize that, from a psychological standpoint, design thinking is a necessary condition for an individual to design their own successful life (Barnett, & Evans, 2016).

One of the key components of design thinking is "human-centered design," since the key figure is the users, their needs, problems, and demands.

Over time, human-centered design has become increasingly popular as its application in social entrepreneurship, business, medicine and education, non-governmental organizations, the public sector, etc., allows for problem-solving; it motivates innovative thinking, unveils hidden opportunities, and encourages thinking outside the box (Kelley, & Kelley, 2013).

Today, design thinking and human-centered design are considered essential for creating innovative and successful products and services. This method has gained significant popularity, especially in recent crisis years, as companies have realized that innovation and creating products that meet user needs are critical success factors and indispensable tools for successful adaptation to new realities. Companies like Apple, Google, IBM, Airbnb, Zoom, and others are successful examples of utilizing design thinking in their operations and ensuring optimal interaction with their users. In Ukraine, during the full-scale Russian invasion, the applications Diia, Monobank, and DTEK have become the best examples of using design thinking, allowing users to conveniently and quickly process documents, transfer or receive money, check power schedules, etc.

The analysis of the design thinking methodology indicates five main stages of its method algorithm that allows for its universal application in educational and production processes, project and research activities through:

- processes, project and research activities through:
- the discovery stage (empathy);
- the focus stage (problem focus);
- the idea generation stage (brainstorming);

- the prototyping stage (prototype development);
- the testing stage;
- the analysis stage (presentation).

Let's consider the developed design thinking strategy for optimal interaction with student youth and method tools in solving social adaptation problems of vocational education students – first-year students of DPTNZ "Ternopil Higher Vocational School of Service and Tourism" (Кікінежді та ін., 2024b).

The first stage of design thinking involves identifying users' problems, outlining their needs, interests, desires, and emotions, which allows for immersion into their world, exploring their issues, and abstracting from one's own assumptions and stereotypes to understand and hear the needs and desires of others. The purpose of this stage is to create *an Empathy Map*, and gather information about users, their needs, and desires through surveys, interviews, questionnaires, etc.

The sample comprised 290 users, of which 80.8% were female and 17.2% male. A predominant portion of the respondents indicated that they do not always feel safe while looking for a specific address or walking around the city (79.3%), and they experience difficulties in using geoinformation tools.

According to the respondents (31%), the primary method for finding the required address is navigation web services. About 21% of students do not know any programs or how to use them. The developed Empathy Map highlighted the problem associated with navigation for first-year students living outside Ternopil.

Processing, organizing, and systematizing information from respondents allowed the identification of key issues faced by students related to navigation in Ternopil. This was addressed in the second stage – *focusing (concentrating on the problem)* – and led to creating a Customer Journey Map.

The goal of the third stage of design thinking – *ideation* – was to conduct brainstorming sessions among students to generate as many diverse ideas as possible for solving the problem. In this stage, collaboration and idea exchange among people

from different fields and with different experiences are crucial. It’s important to generate and document the maximum number of ideas – even those that are unnecessary or unrealistic in information-technology support. Any criticism or judgment is prohibited. The teacher-facilitator manages the engagement of all team members using the "brainstorming" technique. Lessons in geography (a practical lesson "Reading the Movement Schemes of the Regional Center – Ternopil," "Modern Cartographic Sources and Technologies for Creating Geoimages") served as a startup for the concept ideas. The implementation of informing about web services for travel and route planning in geography lessons was supplemented by the use of geoinformation technologies in tourism activities, specifically in practical activities during vocational training.

Prototyping (development-search) is one of the essential tools of design thinking, as it creates a prototype of the concept that demonstrates how the finished product will look and function. This stage helps to forecast future events and allows the team to test the success of their idea and its implementation.

Based on the results of the study, participants recreate typical or potential navigation situations, download web applications, and integrate them into their daily routines, followed by demonstration of the programs, travel routes, and creation of new routes. For this purpose, a workshop for first-year students titled "Ternopil – Guest-Friendly" was conducted.

The practical construct of the study was the creation of a creative geoinformation map, "Ternopil on the Waves of Time," which included the city's most notable objects according to the needs and requests of users. Open access to the map enables young people to independently explore streets previously unknown to them, discover new places, and share new impressions of Ternopil. An important addition was the development and implementation of the geoinformation map "Ternopil in Ecoformat" into the city's touristic environment, prompted by modern-day challenges.

The assessment of results in the *analysis (presentation)* stage is the most important component of research focused on outcomes, aiming to create a quality product that includes competence, politeness, and empathy. Thus, the research on the digital transformation of geographical knowledge in creating a touristic product through design thinking tools revealed the problem of youth adaptation to urbanized environments.

The study confirmed the effectiveness of the design method in solving the problems of social adaptation of vocational education seekers to the urbanized environment, the importance of developing and implementing digital geoinformation services and web applications in creating original tourism products oriented toward users of educational services in the field of tourism, and preparing future tourism industry specialists in social partnership with the community of Ternopil.

The research results were presented to Ternopil's tourism companies, and the tour routes have been implemented in the activities of the "Bosphorus" travel agency. The created geoinformation maps "Ternopil on the Waves of Time" and "Ternopil in Eco Format" demonstrated new non-traditional approaches to engaging users in the development of tourism products and the promotion of Ternopil's tourism sector.

The practical application of design thinking tools as a culture of innovation by local tourism firms is a crucial condition for exerting real business impact on the development of the regional ecosystem, activating youth, and preparing them for further innovative activities and generating and successfully implementing ideas and social initiatives in the community. This will contribute to enhancing the community's attractiveness for the realization of development and investment projects. Searching for innovative technologies, forms, and methods for creating an eco-mental, safe, egalitarian-educational environment as a systemic component of humanizing the educational space is a strategic direction for improving the digital innovation infrastructure of business tourism in the region and Ukraine.

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It outlines approaches to strategy development that incorporate an investment component, which facilitates attracting domestic and foreign investments, the creation of new jobs, and the restoration of infrastructure. Key international methods and models are presented, which communities can consider when formulating their strategic and operational objectives. Particular attention is given to assessing a community's investment attractiveness as one of the key factors in promoting local economic development.

2.5. ***Oksana Kikinezhdi, Yaroslava Vasylkevych, Mykola Ryk.*** **Design thinking as an innovative technology for creating an informational tourism product.** The article presents a theoretical analysis and specifics of using design thinking as an innovative technology in the field of business tourism in the context of digitalization. The results of testing effective resources for using design thinking tools to create information tourism products and to activate geoinformational service-technologies oriented towards service consumers in competitive conditions are described. The study results demonstrated the effectiveness of the design method in forming an ecomentum environment as a system-forming component of the humanization of the educational space and as a strategic direction for improving the digital innovative infrastructure of tourism in Ukraine.

2.6. ***Tetiana Lysiuk, Yurii Biletskyi, Larysa Royko.*** **Digital technologies in the tourism sector.** The role of digital technologies in the development of the tourism industry and their impact on the transformation of consumer experience are explored. The main digital tools used in the tourism sector, including online booking platforms, mobile applications, artificial intelligence, virtual and augmented reality, blockchain and Big Data, are analysed.

The benefits and challenges of digitalisation for travel companies, hotels and tourists are outlined. Particular attention is paid to the prospects for the development of digital technologies in the context of increasing the competitiveness of tourism enterprises, personalisation of services and ensuring sustainable development.

2.7. ***Ihor Mamontov.*** **Prospects for the use of information and analytical technologies in ensuring housing resources within the European union's migration policy in the context of global challenges.** The article examines the state of international legal regulation and scientific approaches to the use of information and analytical technologies in ensuring housing resources within the framework of migration policy in the European Union as a whole and in its individual member states. Based on the analysis of international legal instruments and scholarly research, the necessity of developing and implementing a unified EU information and analytical system is substantiated. This system will comprise databases of optimized housing stocks available for migrants and displaced persons. The article demonstrates the socio-humanitarian, economic, and managerial benefits of introducing a unified information and analytical system for EU housing resources.

2.8. ***Denys Zhezherun.*** **Modern approaches in entrepreneurial training of specialists in transport management and logistics in the republic of Poland.** The development of the European educational space is determined by the influence of political, economic, socio-demographic and technological factors that allow for early identification of potential challenges (in particular, a decrease in demand for specialists in certain

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