Multimedia Technologies in the Training of Students of Higher Education Institutions in Ukraine for Animation Activities in the Recreation and Wellness Sector

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Abstract⸺ **This article examines the development of animation competencies among future tourism professionals in the recreational and wellness sector through the implementation of multimedia technologies. A theoretical model was developed and empirically validated to enhance professional training efficiency through computer-based tools. The research emphasizes the role of interactive presentations, video content, virtual and augmented reality applications, and specialized software in the educational process.**

The study surveyed 330 students from Ukrainian higher education institutions regarding multimedia technology integration in tourism education. Results demonstrated that students most effectively acquired skills in designing animation programs incorporating health fitness components (46.55%) and sports activities (45.12%), while showing lower proficiency in organizing sports animation and wellness centre activities (22.14%).

A survey of 72 higher education instructors revealed varying pedagogical approaches: 39.57% prioritize preparation for animation activities in recreation and wellness; 46.05% implement regular computer-based assessments; 41.72% utilize business simulations; 41.41% conduct master classes; and 48.75% organize quest-based learning activities. The data indicated that 16.79% of instructors emphasize fitness and wellness animation programming, while only 4.67% focus on entertainment-based animation. Furthermore, 48.65% evaluate animation competencies through event organization (competitions, performances, festivals, carnivals, and theatrical productions); 33.82% prioritize experience in music-based animation programs; and 57.66% advocate for practical training in various professional settings, including hotel and restaurant complexes, wellness centres, sanatoriums, children's camps, resorts, and transportation facilities.

The findings suggest that multimedia technology integration enhances creativity, communication skills, and collaborative abilities—competencies essential for animation activities in tourism. This research demonstrates that incorporating digital tools into tourism education effectively

addresses contemporary tourism industry demands and professional requirements.

Keywords – animation, multimedia technologies; recreation, students, tourism.

I. INTRODUCTION

The alignment of tourism education with international standards is a crucial prerequisite for Ukraine's integration into European and global educational space. Higher education institutions are therefore developing innovative approaches to train competent tourism professionals capable of addressing complex challenges in the recreational and wellness sector. This evolution in tourism education reflects the growing importance of professionals who can effectively implement diverse forms of physical activity to promote active recreation and healthy lifestyle choices among tourism service consumers.

Recent scholarly literature demonstrates significant research attention from both national and international academics regarding the professional development of prospective tourism specialists in animation activities within the recreational and wellness sector, reflecting current paradigms in higher education. The existing research encompasses multiple dimensions, including the implementation of animation activities across diverse contexts [1], as well as the cultivation of professional competencies among future tourism specialists in event conceptualization and execution [2, 3, 4].

Researchers indicate that the readiness of prospective tourism specialists for animation activities in the recreational and wellness sector comprises several structural components such as [2]:

Motivational Component. It encompasses intrinsic motivation for self-development and skill enhancement, along with the evolution of existing motives and formation of new ones during professional training. This component is activated through needs, value orientations, and behavioural factors that influence future specialists' engagement in animation activities.

Intellectual Component. It involves comprehensive knowledge of developing and implementing diverse animation service programs targeted at specific demographic groups.

Activity-Based Component. It demonstrates the capacity to utilize various forms of physical activity in designing active recreation programs across accommodation and wellness facilities, adapted for different population segments.

Communicative-Productive Component. It is characterized by an approachable communication style, commitment to continuous improvement, and the ability to maintain constructive dialogue and effective interaction with tourism service consumers.

Reflective Component. It encompasses conscious self-assessment of professional achievements, identification of promising areas for career development, capability to evaluate behavioural patterns of diverse population segments, and professional self-actualization.

M. Danylevych [5] argues that implementing a competency-based approach in higher education facilitates the systematic development of professional competencies, enabling graduates to function effectively within contemporary multidimensional environments characterized by complex socio-political dynamics, market-driven economics, and intensive information-communication flows.

Researches conducted by A. Kolesnik and A. Tarasov [6] and A. Manako [7] examining diverse applications of multimedia content in education demonstrate that such technologies enhance both learning outcomes and foster students' critical thinking and creativity. This finding is particularly significant for animation activities, which demand not only theoretical knowledge but also adaptive competencies and innovative problem-solving skills in dynamic environments.

L. Zanevska [8] posits that the integration of information technologies in physical education specialist training constitutes an essential prerequisite for developing professional competencies. This observation holds particular relevance for animation specialists, who must demonstrate versatility in diverse operational contexts and exhibit adaptability when engaging with heterogeneous audience demographics.

Thus, the relevance of this study stems from several factors: society's demand for specialists capable of effectively implementing animation activities in the recreational and wellness sector; the necessity to develop educational and methodological support for preparing future tourism specialists in animation activities; and the significant potential of animation activities in the recreational and wellness sector as a promising direction for attracting consumers to recreation and health promotion services.

The aim of this study is to theoretically substantiate and empirically verify the organizational and pedagogical conditions necessary for preparing future tourism specialists for animation activities in the recreational and wellness sector.

II. MATERIALS AND METHODS

The research methodology incorporated multiple approaches: analysis, content analysis, abstraction, retrospective analysis of personal scientific and pedagogical experience in higher education; structural and systemic analysis; modelling and design; generalization and synthesis; questionnaires, testing, and pedagogical experimentation; methods of mathematical statistics.

The study sample comprised 330 second-year students pursuing a degree in Tourism (Specialty 242) and 72

academic staff members from five Ukrainian higher education institutions (HEIs).

The formative experiment involved 112 students from the Classic Private University, Ivan Bobersky Lviv State University of Physical Culture, and Yuriy Fedkovych Chernivtsi National University. Participants were divided into control (CG, n=55) and experimental (EG, n=57) groups. These groups were homogeneous in both quantitative and qualitative characteristics at the experiment's onset. While the CG followed the traditional educational system, the EG underwent training incorporating the theoretically substantiated organizational and pedagogical conditions for developing animation activity competencies in the recreational and wellness sector.

III. RESULTS AND DISCUSSION

Enhancing the professional training system for tourism specialists in animation activities requires extensive implementation of innovative educational technologies. The proposed model for developing animation activity competencies comprises five interconnected and mutually dependent subsystems: target, theoretical-methodological, content, procedural, and evaluative (Fig. 1).

The procedural subsystem encompasses forms, methods, means, stages, and functions of competency development. The forms include lectures, practical and seminar sessions in courses such as "Tourism Organization (Animation Technologies)", "Sports Animation Organization", "Dance Animation Organization", educational conferences, consultations, and industrial internships.

The methods are categorized into two groups: simulation (business and role-playing games, training sessions) and non-simulation (problem-based lectures, discussions, round tables with leading tourism experts, brainstorming sessions, and multimedia presentation development).

The educational means include textbooks, assessment tools; ICT resources (multimedia technologies, electronic libraries, Moodle and Zoom platforms); animation tools (physical exercises, team-building activities, dance programs, relay races, orienteering elements, obstacle courses, quizzes); and recreational tools (recreational and sports games, entertainment activities, physical activities, hiking trips).

The practice-oriented stage of developing professional competency in animation activities among future tourism specialists in the recreational and wellness sector encompassed students' acquisition of knowledge, skills, and competencies necessary for their future professional practice. This was implemented through courses such as "Sports Animation Organization", "Dance Animation Organization", and "Tourism Organization (Animation Technologies)". To evaluate this stage, a student questionnaire was conducted.
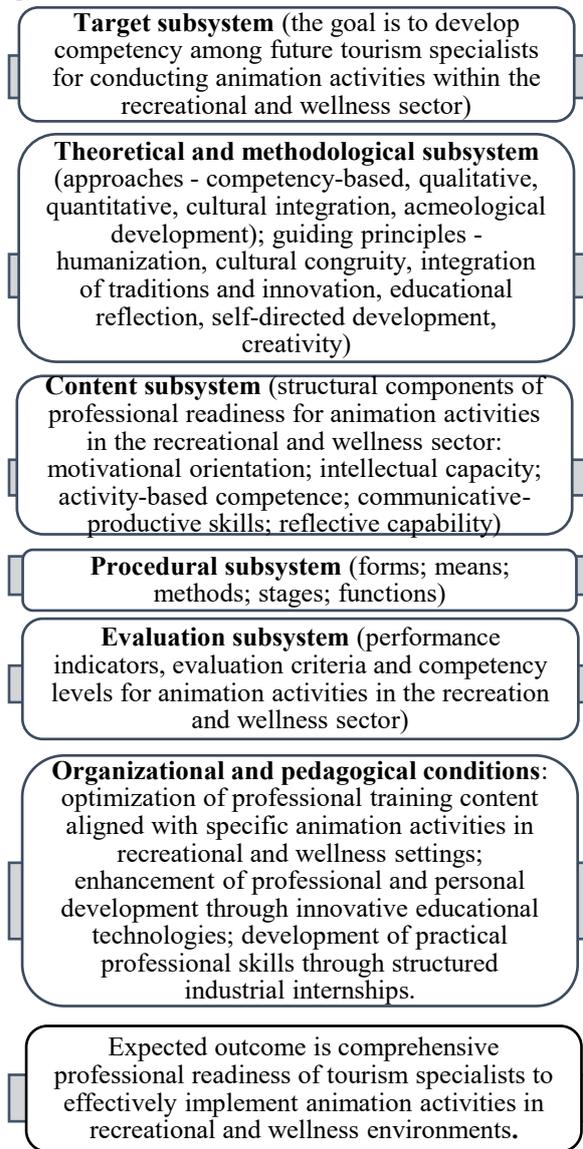

Fig.1. General Framework of the Model for Developing Professional Competency in Animation Activities among Future Tourism Specialists in the Recreational and Wellness Sector.

The questionnaire results indicate that future specialists most successfully acquired skills in: developing animation programs incorporating wellness fitness elements (46.55%) and sports games (45.12%); organizing and implementing sports animation activities in leisure and rehabilitation centres (22.14%). However, the analysis revealed insufficient mastery of skills in designing and conducting animation programs across various contexts, including hotel and restaurant complexes, sports and wellness facilities, sanatoriums, children's recreational camps, leisure centres, and during transportation. These findings from the student respondents indicate the necessity for modifications and adjustments to the current training system for future tourism specialists in animation

activities within the recreational and wellness sector.

To ensure appropriate facilitation of professional and personal development of future tourism specialists through innovative educational technologies, a questionnaire of academic staff was conducted. This research is particularly relevant as Ukraine's higher education system has recently undergone diversification in teaching methodologies for professional training.

The questionnaire of 72 academic staff members from Ukrainian higher education institutions revealed the following findings: 39.57% of respondents focus their efforts on developing students' competency in animation activities within the recreational and wellness sector; 46.05% regularly implement computer-based testing for student assessment; 41.72% utilize business simulations; 41.41% conduct masterclasses; 48.75% incorporate quest-based learning activities.

Regarding specific animation program focus: 16.79% emphasize physical education and wellness animation programs. Only 4.67% concentrate on entertainment-based animation programs.

In terms of practical skill development: 48.65% direct their efforts toward organizing and conducting various events (competitions, demonstrations, festivals, carnivals, and cultural-historical theatrical performances) to assess students' animation activity competencies; 33.82% focus on students' acquisition of experience in organizing and conducting music-accompanied animation programs; 57.66% consider it beneficial to conduct industrial internships in various settings: hotel and restaurant complexes, sports and wellness facilities, sanatoriums, children's recreational camps, leisure centres, transportation-based activities during trips.

The development of comprehensive test packages for professionally-oriented courses, specifically "Tourism Organization (Animation Technologies)", "Sports Animation Organization", and "Dance Animation Organization", enabled student knowledge assessment during classroom sessions through the Moodle multimedia platform. Currently, higher education institutions in Ukraine are necessitated to implement distance learning formats, facilitating the adoption of new teaching technologies.

A. Zakharina, in collaboration with L. Sushchenko and I. Koloshchuk, developed a computer program "Pedagogical Diagnostics of Professional Readiness Among Future Tourism Specialists for Animation Activities in the Recreational and Wellness Sector" for evaluating competency levels of future tourism specialists in animation activities within the recreational and wellness sector. This diagnostic tool is designed to accommodate student group testing for up to 130 participants. Algorithm for the programme application is presented in Fig. 2.

The empirical validation of the proposed pedagogical model demonstrates its efficacy in developing animation competencies among prospective tourism specialists. The

implementation of this model, incorporating computer-based assessment methodology, yielded statistically significant outcomes in competency development metrics.
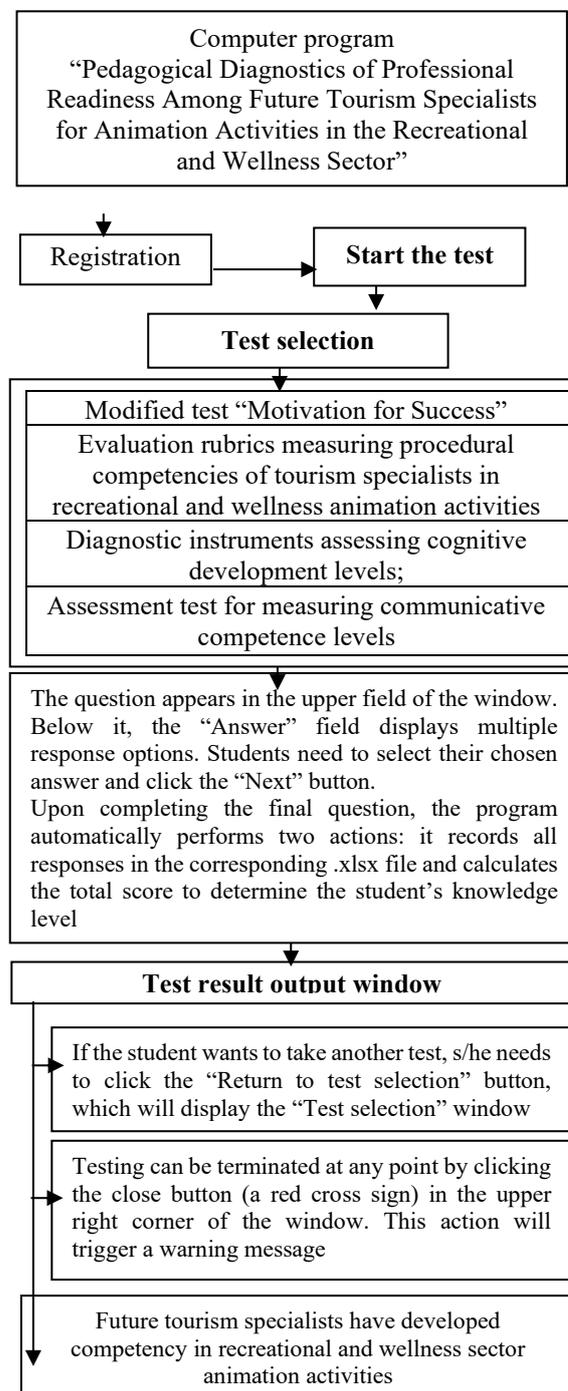

Fig. 2. Algorithm for using the computer program.

Comparative analysis between the EG and CG revealed distinctive patterns in competency acquisition. The EG students exhibited substantial positive trajectories across all competency levels. Specifically, the proportion of participants demonstrating high-level competencies increased by 11.23 percentage points (from 8.77% to

20.00%), while those with intermediate competencies showed a 13.67 percentage point increase (from 47.73% to 61.40%).

Correspondingly, the percentage of participants exhibiting low-level competencies decreased significantly by 25.26 percentage points (from 43.86% to 18.60%).

In contrast, the CG students demonstrated marginal progression. The proportion of participants with high-level competencies increased by 5.46 percentage points (from 9.09% to 14.55%), while intermediate competencies showed an 8.72 percentage point increase (from 39.64% to 48.36%). The reduction in low-level competencies was less pronounced, with a 14.18 percentage point decrease (from 51.27% to 37.09%).

These quantitative indicators (Table 1) substantiate the enhanced efficacy of the proposed pedagogical model in developing animation competencies for recreational and wellness sector applications.

TABLE 1

DYNAMICS OF THE LEVELS OF READINESS OF THE CG AND EG STUDENTS FOR ANIMATION ACTIVITIES IN THE RECREATIONAL AND WELLNESS SECTOR (N=112)

| Level | Groups | Results of the pedagogical experiment | | | | |
| | | Before | | After | | Differences in % |
		Number of people	in %	Number of people	in %	
High	EG (n=55)	5	9,09	8	14,55	5,45
	CG (n=57)	5	8,77	11	20,00	11,23
Intermediate	EG (n=55)	22	39,64	27	48,36	8,73
	CG (n=57)	27	47,37	35	61,40	14,04
Low	EG (n=55)	28	51,27	20	37,09	14,18
	CG (n=57)	25	43,86	11	18,60	25,26

In general, within the structure of components of future tourism professionals' readiness for animation activities in the recreational and wellness sphere, significant differences were established between the readiness levels of students in the experimental group (EG) (208.20 ± 4.02 points) and those in the control group (CG) (186.73 ± 3.94 points) (with $t_{calc}=3.80$). The summarized data are presented in Table 2.

TABLE 2
READINESS INDICATORS OF STUDENTS IN EG AND CG FOR ANIMATION ACTIVITIES IN THE RECREATIONAL AND WELLNESS SPHERE, POINTS

Results of the pedagogical experiment	Group	$M \pm m$	σ	$t_{calc.}$	t_{table}
Before	EG (n=55)	177.38 ± 4.09	30.34	0.87	1.99
	CG (n=57)	182.49 ± 4.18	31.54		
After	EG (n=55)	208.20 ± 4.02	30.37	3.80	1.99
	CG (n=57)	186.73 ± 3.94	29.37		

The empirical findings derived from the experiment demonstrate the efficacy of the identified and theoretically substantiated organizational and pedagogical frameworks for developing future tourism specialists' competency in animation activities within the recreational and wellness sector.

The integration of innovative technologies into the educational curriculum has significantly enhanced the professional and personal development of future tourism specialists. Specifically, it has facilitated: the development of critical thinking skills; the enhancement of professional knowledge acquisition; the formation of profession-oriented cognitive processes; the stimulation of research activities; and the expansion of both self-assessment capabilities and systematic evaluation through the computer-based program "Pedagogical Assessment of Professional Readiness Among Future Tourism Specialists for Animation Activities in the Recreational and Wellness Sector".

The preparation of future tourism specialists for animation activities in the recreational and wellness sector has acquired particular significance in contemporary conditions. The findings of this investigation both corroborate and expand upon previously established aspects of this domain. A substantial body of researchers [9-13] has investigated the impact of modern multimedia technologies on educational processes, demonstrating their capacity to create more engaging and interactive learning environments. Our research confirms that the implementation of multimedia technologies enhances student engagement and facilitates more effective knowledge retention.

Multimedia resources contribute significantly to developing students' health consciousness, a central theme in the research conducted by I. Hrybovska et al. [14]. The pedagogical methodologies outlined in their study can be effectively adapted for multimedia-based animator training. The synthesis of these research findings enables the development of a comprehensive learning approach, integrating physical education, health awareness, and

contemporary technologies. This integration can serve as a foundation for developing innovative programs that address student needs within modern educational frameworks. Additionally, the multimedia tools described in studies [15,16] can be effectively utilized in creating educational materials, presentations, and interactive sessions in recreational animation, as evidenced by our findings.

The examination of multimedia technologies' influence on education and animation activities has garnered significant attention from international researchers, providing broader insights into global trends. S. Göksu and M. Kocakaya's research [17] investigates the correlation between multimedia materials and student achievement. Their findings indicate that multimedia resources not only enhance academic performance but also positively influence students' learning attitudes — a crucial factor in animator training, as positive learning dispositions contribute to more effective professional development. Studies [18-21] further demonstrate the beneficial impact of integrating multimedia resources into physical education institutions, aligning with our conclusions regarding the significance of multimedia technologies in animation activity preparation.

Given that contemporary animation activities necessitate proficiency in digital tools, the role of multimedia technologies in developing digital literacy and overall educational outcomes has become increasingly prominent. Our findings align with numerous scholars [22-25] who emphasize the crucial role of multimedia technologies in preparing students for animation activities. Our study also confirms the findings of scientific research on the important role of recreational and wellness activities in the learning process of students and in improving their quality of life [26, 27]. This underscores the necessity for continued development and implementation of innovative technologies within educational curricula to enhance the quality of education in Ukraine.

IV CONCLUSIONS

The conducted pedagogical experiment conclusively demonstrates the effectiveness of the identified and theoretically substantiated organizational and pedagogical conditions in developing future tourism specialists' competency in animation activities within the recreational and wellness sector. The EG students exhibited significantly higher levels of preparedness for animation activities compared to the CG students. The implementation of multimedia technologies fostered the development of creative capabilities, communication proficiency, and collaborative skills—essential competencies for successful animation activities in tourism. Consequently, the integration of digital tools into the educational process enables the adaptation of

professional training to meet contemporary challenges in the tourism industry.

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