

# The Effectiveness of Gamification Elements for the Development of Future Culturologists' Digital Competence

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## Abstract

The aim of the research was to experimentally prove the effectiveness of gamification of learning for the development of future culturologists' digital competence. The research was based on the information from the monitoring of the subject or professional module, as well as a package of control and measuring materials. It also involved diagnostics of activity component, diagnostics of the level of digital component. Statistical tests — the Anderson-Darling test, the Cramér–von Mises test, Kolmogorov-Smirnov test, the Shapiro-Francia test, the Wilcoxon test, Mann-Whitney U-test, Student's t-test — were performed to formally verify the consistency of data with the normal distribution law. The greatest differentiation was observed for cognitive, praxiological and reflective criteria. The increase in the cognitive component was promoted by the implementation of strategies for adapting educational content and multiple control of the students' self-education process. The significant increase in the praxiological component was determined by the intensified student learning activity and, accordingly, the development of the activity component. In all tests,  $p$  significantly exceeds the fixed level of significance, so we can conclude that the data of the control and experimental groups were distributed uniformly at the beginning of the experiment. By testing the hypotheses  $H_0$  and  $H_1$  for EG and CG at the end of the pedagogical experiment, it was found that the statistics for the t-test exceeds the critical value and is in the range of significance. So, the approbation of the research results revealed significant differences in the learning outcomes of CG and EG, which allows us to state the effectiveness of gamification of learning. Based on the research results, we can argue that the gamification of learning has a significant impact on the development of future culturologists' digital competencies. The study showed a significant positive impact of the introduction of gamification elements in the learning process. Further research should focus on studying ways to improve future culturologists' digital competencies. It is necessary to study the impact of Internet technologies on the future culturologists' professional development.

**Keywords:** gamification of learning, acquisition of competencies, digital competence, higher education, training of culturologists

## 1. Introduction

### 1.1 Topicality

The new generation of students (Generation Z) lives in a digital environment created by digital technologies, including those that influence the development of modern education (Zhuravlova et al., 2022). These technologies

include big data, artificial intelligence, virtual reality technologies, cloud technologies, the Internet of Things, and others. Trends in the digital transformation of professional education require students to have a high level of digital competence for the success of future professional activities (Shamne, Dotsevych & Akimova, 2019; Gumenyuk et al., 2021). The new recommendations of the UNESCO ICT Competency Framework for Teachers (UNESCO, 2011) reflect the urgency and importance of digital competence, which includes digital literacy. According to Dichev and Dicheva (2017), gamification of learning is one of the effective modern tools to develop digital competence.

There are many definitions of gamification, but they all have the same meaning. Gamification is the use of game elements and game mechanics in a non-game context. This definition can be interpreted as the use of game elements that make any area of life exciting. This allows achieving the goals and assessing the level of success. Ding (2019) distinguishes three types of influence in gamification: external, internal and behaviour-changing. External influence means interaction with the world. Internal influence means involving students in the processes of increasing productivity and efficiency of learning. Behaviour-changing influence implies triggering motivation in the use of gamification of learning, which makes it exciting and interesting (Ding et al., 2018).

Nike Pelling, American programmer, and inventor was the first to use the term “gamification” in 2002. It meant the process of using game thinking and game dynamics to engage the audience in activities and the problem-solving process. But the term was hardly used by the professional community, was not the subject of study in the academic environment until 2010. In 2011, Garther included gamification along with customization and big data in the list of new popular technologies. Gamification involves the use of game elements, and it can be assumed that it originates from simple games that were popular in the days of ancient civilizations (Ding et al., 2017; Koval et al., 2020).

Gamification is a new popular trend in the educational process. According to El-Telbany and Elragal (2017), the implementation of game strategies in learning can provide an experience that will create the necessary meaning and enhance student motivation. The gamified project takes advantage of game mechanics, loyalty programmes, and behavioural economics to address critical issues and increase engagement.

Gamification is currently adapted to different areas of life, so this provides that its goals are common and suitable for different situations. Of course, goals may change depending on the activities or areas (Oklander et al., 2018). Gamification is a universal tool for any educational process due to the settings that allow solving a particular pedagogical problem (Bondar et al., 2019). The method of gamification can be especially effective in the training of future culturologists (Ge, 2018).

Training of modern culturologists requires prompt response to the needs of the educational market, which involves continuous improvement of curricula and programmes. So, combining the professional training of students majoring in Culturology with their basic digital competence requires the use of the latest educational technologies (Swacha, 2021).

### *1.2 Unexplored Issues*

The following contradictions were revealed through the analysis of existing research and practical experience:

- at the socio-pedagogical level: between the requirements of the digital society and the lack of effective approaches to building a personalized adaptive learning in higher educational institutions (HEIs) in the context of digitalization;
- at the scientific and theoretical level: between the objective need to personalize the mass educational process and the lack of an integrated scientifically grounded concept of digital competence;
- at the scientific and methodological level: between the opportunities that personalized learning with the use of gamification offers and the lack of an effective methodological system of personalized adaptive subject learning.

The identified contradictions point the need for an integrated understanding of the organization of the educational process in the electronic environment, the development of its theoretical and conceptual foundations, the development of a methodological system of education.

### *1.3 Aim*

The aim of the work is to study the peculiarities of the use of gamification for the development of future culturologists' digital competence. The study should confirm or refute the hypothesis that gamification contributes to the development of future culturologists' digital competence.

### *1.4 Objectives/Questions*

1. Study the impact of the gamification of future culturologists' learning on the development of digital competencies.
2. Assess the level of digital competence in students majoring in Culturology developed through using elements of

gamification of learning.

## 2. Literature Review

According to Doumanis et al. (2019), the development of informatization of education began with the informatization of subject learning. Faes and Moens (2019) write about the current development of a methodology for informatization of education and conducting research related to the digitalization of education. Gamification is one of the promising areas of the digital transformation of education. Garrett and Young (2019) analysed the existing approaches to the gamification of learning, and conditionally identified the following main areas: the development of programmed learning, as well as technologies of adaptive learning and testing. Göksün and Gürsoy (2019) dealt with the theoretical foundations of building a pedagogical adaptive educational system in the context of offline learning — learning that is realized in direct contact between student and teacher. González-Eras et al. (2022) developed the structure and content of adaptive educational systems and resources as elements of e-learning environment in online learning.

However, the new educational opportunities that modern digital technologies offer have not been implemented so far, as well as the existing approaches to professional training have not been developed and synthesized. Marouf and Brown (2021) indicate that significant world experience in the field of gamification of learning has been accumulated over the past twenty years. Manzano-León, et al. (2021) state that approaches and methods of personalization of education are being developed in the context of intensive development of e-learning. Many researchers consider adaptive and personalized learning as independent effective approaches, therefore the introduction of the concept of personalized adaptive learning must be clearly defined. In the context of digitalization of education, Núñez-Canal et al. (2022) point to the development of methods of managing the educational process in the electronic information and educational environment of HEIs, as well as methods and approaches of digital monitoring, recording, and predicting student behaviour. Mechus and Smotr (2021) developed models and methods for building individual educational trajectories in learning environments and electronic educational systems. The current context requires the development of models of active management of the educational process on the subject in the electronic environment that provide pedagogical interaction of participants with the reliance on the multifaceted individual peculiarities of students. These studies have made a significant contribution to the implementation of digitalization technologies in the educational process in modern education. Distance learning necessitated by the imposed quarantine restrictions during a coronavirus pandemic has revealed new problems in education.

## 3. Methods

### 3.1 Research Design

Experimental work on the training of future culturologists through the gamification of learning involved several stages:

#### 1. The first stage:

- development of students' competence indicators;
- description of generalized features for the levels of each component that make up the competence;
- selection and development of diagnostic tools for assessing the degree and dynamics of the levels of digital competencies.

#### 2. The second stage:

- conducting research of the initial state of students' digital competencies;
- determination of the formative experiment stages based on the obtained results.

The null statistical hypothesis  $H_0$  is that the development of digital competence does not depend on the learning method. An alternative statistical hypothesis  $H_1$  is that the development of digital competencies is more effective when using the gamification of learning.

### 3.2 Sampling

The study involved 180 students at the National University of the Culture and Arts, Department of Culturology. Students majoring in Culturology and Art History had the opportunity to take part in the research. Such a

composition and stratified random sampling allows for a more objective study and identifying patterns to analyse the impact of augmented reality technologies on academic performance. Two groups of the respondents — experimental and control — were formed, 90 participants each. Students of the experimental group studied specialised subjects using gamification during the 2020/2021 academic year (Table 1).

**Table 1.** The Use of Gamification in the Academic Subjects of Future Culturologists

Academic subjects	Implemented gamification methods	Description
Culturology	Competition	Creating a game to develop professional digital skills
Ethics	Badges	Development of a system of visual encouragement for academic performance
Philosophy of Culture	Leaderboard	Using a dynamic table to record student performance
Culture of Mass Communications	Significant stories	Creating an educational game, which provides conveying the cultural narrative to the conditional alien race
Corporate culture	Avatar	Using the model of mass idea about the participants in corporate activities

Source: developed by the authors

The control group students studied with the use of the traditional curriculum. It should also be noted that communication between students of the control and experimental groups inevitably led to mutual leakage of educational information, but this does not have a critical impact on the results of the study.

### 3.3 Methods

1. There are many systems for assessing the level of digital competence. At the same time, we can assume that many of them are designed to measure the level of knowledge and activity components only. Therefore, rating and examination grades do not give a complete picture for the assessment of the results obtained — the level of a particular competence. Their level can be monitored as follows. The components of the methodological complex for monitoring support are usually a cyclogram of monitoring of the subject or professional module; consolidated register of monitoring of the subject or professional module, a package of control and measuring materials. Assessment of the competencies levels is layered. The level of competencies means the degree of their expression. Levels of digital competence are determined by the activity criteria. The basic level criterion is the reproductive activity according to a given algorithm, which relies on the understanding and reproduction of professional actions. A partial search, which is characterized by professional actions in solving the problem, is the productive level indicator. Search, in which the respondent demonstrates a reasonable combination of ways to solve the problem, is an indicator of the creative level. Two criteria are proposed to assess the level of digital competence of future culturologists: professional readiness (can) and psychological readiness (want).

2. The level of digital component was diagnosed using a test at the end of the experiment. The test contained 28 closed-ended questions (7 questions for each of the four competencies of the block (Appendix A)). The assessment was carried in the following way: 1 point was given for each correct answer. The maximum score for the test is 28 points (7 points for each competence).

3. The activity component was diagnosed by experts. The experts were 25 teachers from the Department of Culturology of the National University of the Culture and Arts.

4. Statistical tests — the Anderson-Darling test, the Cramér–von Mises test, Kolmogorov-Smirnov test, the Shapiro-Francia test, the Wilcoxon test, Mann-Whitney U-test, Student's t-test — were performed to formally verify the compliance of the data with the normal distribution law.

### 3.4 Tools

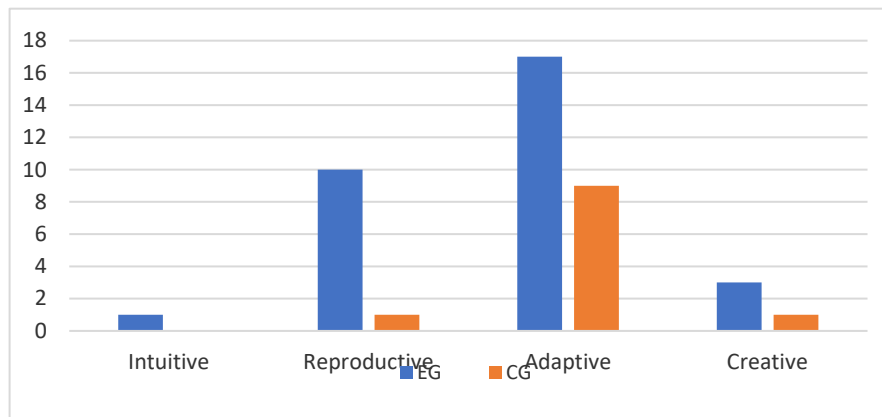
Google Forms were used for the survey. The data were entered and processed in Microsoft Excel and SPSS Statistics 18.0. All data are given in relative (% of the number of respondents) values.

### 3.5 Ethical Criterion

The research design is based on the principles of respect for the individual, gender equality, non-discrimination on any grounds, validity, professionalism, consistency of conclusions. All stages of the pedagogical experiment correspond to the generally accepted academic ethical principles of research work. Respondents were asked to answer the questions of the test honestly. Respondents provided their informed consent for the processing of their personal data and the publication of research results in scientific papers. The study was based on reliable and proven research methods and data processing tools.

## 4. Results

Figure 1 presents the general results of diagnostics of the level for the block of digital competences.



**Figure 1.** Comparative Chart for the Levels of Future Culturologists' Digital Competence

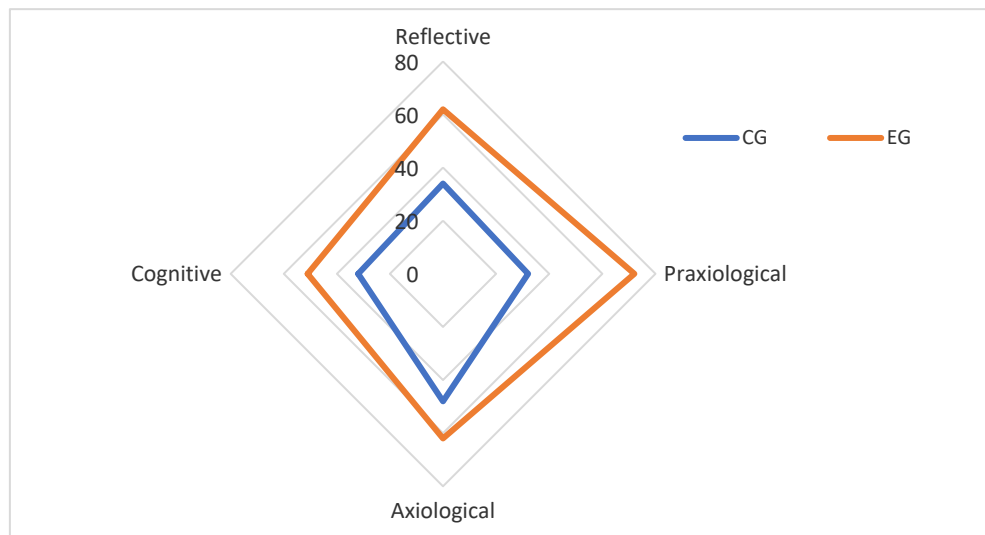
Source: built on the basis of the research results

It follows from the chart that the level of the block of digital competence in EG students significantly exceeds that of CG students. We use the nonparametric statistical Mann-Whitney test to assess the significance of differences in ability levels, which allows identifying differences in the level of the measured feature in two independent samples (less than 100 values). Experimental data meet the requirements for the limitations of this criterion. In each sample, the values are more than 3 and less than 100. The values of the samples are the points that are the general results of the levels for the block of digital competencies.

The largest of the two sums is the sum of the ranks in the first sample (EG). The value of the statistics for the criterion is determined by the formula:  $U = (n_1 * n_2) + (n_1 * (n_1 + 1)) / 2 - T_1$ , in our case  $n_1 = 24$ ,  $n_2 = 18$ ,  $T_1 = 684$   $U = 24 * 18 + 24 * 24 : 2 - 684 = 432 + 288 - 684 = 36$ . We find the critical value of  $U$  for the significance level  $\alpha = 0.01$ :  $U_{crit} = 132$  from the table of critical values of the Mann-Whitney test. Obtained  $36 < 132$ , therefore, an alternative hypothesis is accepted with a probability of erroneous judgment of not more than 1%. So, the significance of differences in the levels of digital competence is proved with a 99% confidence.

We further assessed the significance of differences in the levels of personal elements and psychological attitudes in the composition of competencies in EG before and after the formative experiment. We used the Wilcoxon test for this purpose. The criterion is used to compare indicators of change in two different conditions on the same sample of the respondents. It can be used to determine whether the shift in one direction is more significant than in another. The criterion allows establishing not only the direction of changes, but also their severity. The following condition is set for the sample size:  $5 \leq n \leq 50$ . The number of sample elements is 24, that is this condition is met. The empirical value of the criterion is defined as the sum of the ranks corresponding to the atypical shifts. There is only one such shift, which corresponds to a rank equal to 5. Therefore, the empirical value of the criterion will be equal to this rank:  $Temp = 3$ . Let the level of significance be  $\alpha = 0.01$ .  $T_{cr}(0.01) = 61$ . If the critical value does not exceed the empirical one, there are no grounds for rejecting the null hypothesis of insignificance of differences at this level of significance. Otherwise, the null hypothesis is rejected.  $Temp = 3 < 10$  — the null hypothesis should be rejected.

Figure 2 shows the dynamics of learning outcomes in EG and CG. Radar charts show the percentage of students with basic and advanced levels, that is “productive” level of competence at the initial and final stages of the experiment. The greatest differentiation is observed for cognitive, praxiological and reflexive criteria. The growth of the cognitive component was promoted by the implementation of strategies for adapting educational content and exercising multi-step control over the self-education of students. The significant growth of the praxiological component is determined by the intensified student activity in the educational process and the corresponding development of the activity component. At the same time, the regular inclusion of self-assessment methods and mechanisms for operational monitoring of students’ own learning outcomes contributed to the dynamic growth of the reflective component. The growth of the axiological component is associated with the inclusion of the block of controlling influences in the structure of the sub-model of educational process management, which enhances the motivation of students and involve them in the learning process.



**Figure 2.** Dynamics of the Level of Digital Competence in CG and EG

Source: built on the basis of the research results

The reliability of the results of the research and experimental work was assessed through the methods of statistical analysis. The data were checked for normality and homogeneity to test the applicability of parametric one-way analysis of variance. The conformity of the obtained samples (results of the experimental and control groups) with the normal distribution was checked through visual analysis and formal tests. Visual assessment was performed by studying the empirical distribution of the experimental group at the beginning of the experiment.

To formally verify the compliance of the data with the normal distribution law, we conducted statistical tests — Anderson-Darling test, the Cramér–von Mises test, Kolmogorov-Smirnov test, the Shapiro-Francia test. These criteria test the hypothesis H0: “the data comply with the normal distribution law” against the alternative H1 – “H0”. Table 1 presents the results of tests to verify the normality of the data in the experimental group at the beginning of the experiment.

**Table 2.** Verification of the Data Normality in the EG at the Beginning of the Experiment

Test	Test statistics	p-value	Significance level $\alpha$	Conclusion
Anderson-Darling test	A = 0.66085	0.083	0.5	H0 +
Cramér–von Mises test	W = 0.09585	0.123		H0 +
Kolmogorov-Smirnov test	D = 0.06821	0.162		H0 +
Shapiro-Francia test	W = 0.98075	0.066		H0 +

Source: built on the basis of the research results

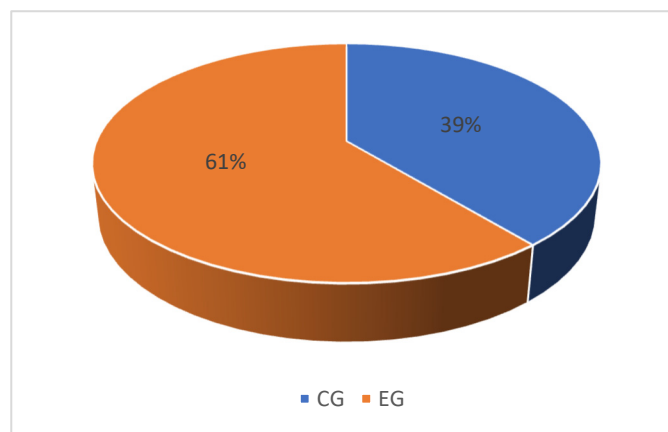
The analysis of the test results revealed that the obtained p value for each test is greater than a fixed level of significance, so there is no reason to reject hypothesis H0 about the normality of data distribution in the experimental group at the beginning of the experiment at significance level 0.05. Table 3 presents the results of tests to verify the normality of the data in the control group at the beginning of the experiment.

**Table 3.** Checking the Normality of the CG Data at the Beginning of the Experiment

Test	Test statistics	p-value	Significance level $\alpha$	Conclusion
Anderson-Darling test	A = 0.69777	0.066	0.5	H0 +
Cramér-von Mises test	W = 0.10571	0.093		H0 +
Kolmogorov-Smirnov test	D = 0.07577	0.075		H0 +
Shapiro-Francia test	W = 0.9823	0.092		H0 +

Source: built on the basis of the research results

In all tests, p value significantly exceeds the fixed level of significance, so we can conclude that the data of the control and experimental groups are uniformly distributed at the beginning of the experiment. This is confirmed by the box plot of the experimental and control groups, which represents the variance of estimates for EG and CG at the beginning of the experiment (Figure 3).



**Figure 3.** Box Plot for EG and CG at the Beginning of the Experiment, in %

Source: built on the basis of the research results

As the classical analysis of variance revealed fulfilled conditions of normality and homogeneity, we can use the tests for parametric analysis of variance, such as Student's t-test to compare independent samples of experimental and control groups at the beginning of the experiment to assess the effectiveness of pedagogical research. The null hypothesis H0, which was tested through Student's t-test, was that there were no statistically significant differences in the means of the results of students in the experimental and control groups, with alternative H1: "there are statistically significant differences in the means of the results of students in the control and experimental groups" (Table 4).

The analysis found no statistically significant differences at the beginning of the experiment between CG and EG students. As the t-test statistics are less than the critical value and are in the range of insignificance, we accept the null hypothesis and reject the alternative hypothesis of the existence of statistically significant differences between CG and EG at the beginning of the experiment. Testing the hypotheses H0 and H1 for EG and CG at the end of the pedagogical experiment, it was found that the t-test statistics exceeds the critical value and is in the range of significance. This allows us to reject the null hypothesis and accept the alternative hypothesis of the existence of statistically significant differences between CG and EG at the end of the experiment. Therefore, the approbation of the research results revealed significant differences in the academic performance of CG and EG, which allows us to

state the effectiveness of gamification of learning.

**Table 4.** Test results for the Student's t-test

	Beginning of the experiment	End of the experiment
Statistics	$t = 0.82634$	$t = -5.7036$
Significance level	0.05	
p value	0.5214	3.315e-08
Interpretation	No statistically significant differences between groups were found	Statistically significant differences between the groups were found

Source: built on the basis of the research results

## 5. Discussion

The research found that the students were willing to participate in the introduction of gamification technologies in the educational process, this position was also shared by Bai et al. (2020) in their research. Perception of the game entirely depends on the specifics of human consciousness, which is also noted by Aldemir et al. (2018). Therefore, the virtual world of games is significantly different from the world and sensations of everyday life.

When studying different academic subjects, it is very important to monitor the dynamics of the studied systems over time or depending on various parameters of the external environment or the internal manifestations of the system. Al-Azawi et al. (2016) and Barata et al. (2017) draw attention to these factors. It is often simply impossible to describe these complex phenomena at the verbal level only, as respondents from both the experimental and control groups point out. Gamification of trends that describe the consequences of a decision in the subject makes the educational process more efficient, facilitates the learning process, as the experimental group participants noted. This is evidenced by studies of such research teams as Bouchrika et al. (2019), Buckley & Doyle (2017). However, Cattaneo et al. (2022) and da Rocha Seixas et.al. (2016) emphasize the need to combine new and traditional teaching and learning methods.

Comprehensive gamified presentation of the studied material in computer training programmes, the use of "automated training courses" are supplemented by opportunities for interactive activities of students. The programmes allow for student feedback in the course of his work with the subject of study, that is they allow to organize the student's independent work on learning the material. It is important to note that the students learn at an individual pace in this case. Derfler Rozin, & Pitesa, (2020) and Despeisse (2018) noted a special role of specialized programmes in the gamification process of learning. Software that allows organizing interactive games in the form of educational work are of value. However, the organization of an effective game situation requires not only individual work of students with a computer programme, but also a collective discussion of the game with all its participants, making a joint decision (Bessarab et al., 2021; Goian et al., 2020). Therefore, software with a game plot will be the most rationally used in the complex organization of students' work, both with the computer equipment and without it, which is also noted by Gokbulut (2020) and Zahedi et al. (2021).

According to Pereyaslavskaya, and Kozub (2021), conditions should be created to involve students in learning to replace the standardized teaching methods. Those conditions must provide for partnership between students and teachers who are jointly engaged in research and gain new knowledge. According to Yanchuk (2021), such cooperation can be organized by gamifying learning.

The academic novelty of the research is to study and develop recommendations based on a practical case of development, implementation, and implementation of a gamified project in learning (Bachtiar, et al., 2018). Practical significance for teachers and students is the identified positive and negative aspects in the implementation of the gamified learning. This will allow teachers, based on the results of the study, to improve the quality of development and effectiveness of the implementation of gamified projects in the educational process.

Theoretical significance of the study:

- contradictions and unresolved problems in the organization of the process of training future culturologists in the system of higher professional education, its specifics in modern conditions were identified;
- the concept of "digital competence" is clarified in relation to the process of training future culturologists, and its structure was identified from the perspective of a systematic approach;



- the conditions required and sufficient for the successful development of digital competence in future culturologists in the system of professional culturological education in a classical university were theoretically substantiated.

Practical significance of the study:

- The developed methodology can be used in the Free Economic Zone in the training of specialists, as well as in the system of retraining and advanced training of personnel of cultural orientation.

The reliability of the research results is due to the reliance on the methodological principles of scientific and pedagogical research, a comprehensive analysis of the problem at the interdisciplinary level. The use of a set of different complementary methods of collecting and processing empirical material contributed to the objectives of the work.

Practical significance of the study: the developed methodology can be used in the training of specialists in higher educational institutions, as well as in the retraining and advanced training of employees of the cultural field.

The reliability of the research results is determined by the reliance on the methodological principles of scientific and pedagogical research, as well as a comprehensive interdisciplinary analysis of the issue. The research objectives were fulfilled using a set of different complementary methods of collecting and processing empirical material.

## 6. Conclusions

The research is topical because of the comprehensive use of IT in all areas of the educational process. That is why, an important task of training future culturologists is not only the acquisition of professional competencies in the fields of culturology and art history, but also digital competencies. Gamification of learning is one of the modern and effective methods of acquiring digital competence.

The greatest differentiation is observed for cognitive, praxiological and reflexive criteria. The greatest differentiation is observed for cognitive, praxiological and reflexive criteria. The growth of the cognitive component was promoted by the implementation of strategies for adapting educational content and exercising multi-step control over the self-education of students. In all tests, p value significantly exceeds the fixed level of significance, so we can conclude that the data of the control and experimental groups are uniformly distributed at the beginning of the experiment. Testing of the hypotheses H0 and H1 for EG and CG at the end of the pedagogical experiment was found that the t-test statistics exceeds the critical value and is in the range of significance. The approbation of the research results showed significant differences in the academic performance of CG and EG, which allows us to state the effectiveness of gamification of the educational process. So, it can be stated that the gamification of learning contributes to the development digital competence of students majoring in Culturology.

Further research should focus on studying ways to improve the digital competencies of future culturologists. It is necessary to study the impact of Internet technologies on the professional development of future culturologists. It is also necessary to pay attention to the impact of digitalization of education on the culturological worldview of students.

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**Appendix A****Diagnostics of the level of the digital component of future culturologists**

	Yes	Rather yes	Rather no	Quite inappropriate	I can't answer
<b>Block 1: Subject-pedagogical Element of the Digital Component</b>					
1. Do you consider it necessary to know and apply safety and public health regulations when using ICT					
2. Do you consider it appropriate to know and use quality references related to culturology?					
3. Is it necessary to be able to design and use their own electronic educational resources in the educational process?					
4. Is it necessary for culturologists to be able to design and use their own educational computer games in the educational process?					
5. In your opinion, is the use of digital technology necessary for visual creativity?					
6. Do you think it is necessary to be able to use digital technologies of musical composition and performance in your professional activity?					
7. Do you consider it appropriate to use web services on the Internet to prepare and conduct educational activities					
<b>Block 2. Engineering and Computer Competencies</b>					
1. What is the importance of ICT for modern man?					
2. Does a modern man need to be able to use a computer and other technical devices, have access to the Internet and use it?					
3. Are you familiar with the concept of "ICT competence"?					
4. Should a modern culturologist have ICT competence?					
5. Is it necessary for modern culturologists to use ICT and digital technologies in their methodical work?					
6. Do modern culturologists need to increase their ICT competence?					
7. Do you have the necessary and sufficient ICT competence to carry out your future professional activity?					
<b>Block 3. Common User Component of ICT Competence</b>					
1. Do you follow the rules of suspension, continuation and termination of the work with ICT tools?					
2. Can you fix minor ICT problems?					
3. Do you know the safety rules when working with computers and other ICT hardware?					
4. Do you follow safety rules when working with computers and other ICT hardware?					
5. Do you follow ethical and legal standards for the use of ICT?					
6. Can you shoot, edit and use video?					

7. Do you know how to work with office programmes?					
<b>Block 4. General Pedagogical Component of ICT Competence</b>					
1. Do culturologists need to communicate with their colleagues on the Internet?					
2. Do you need to use ICT tools in your work?					
3. Is it possible to use ICT in individual work?					
4. Is it necessary to create a digital portfolio for the future culturologist?					
5. Should the future culturologist have his/her own Internet resources?					
6. Do ICT tools help future culturologists to establish professional communication?					
7. Does the future culturologist need to develop general digital competencies?					

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