

Digital Gamification as a Leading Factor in the Educational and Learning Process of Law Students

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Abstract The relevance and the leading role of gamification in the educational and learning process is caused by the fact that traditional teaching techniques are no longer as effective as they were considered previously. Moreover, the reduction of the contact hours in the master course content does not allow students to develop practical skills to their full extent. The intellectual status of students has also changed: the students of the 21st century who grew up playing computer games and using social networks are bored by listening to the lectures and reading textbooks. They do not trust their own thinking but rely upon their gadgets' memory capacity and program codes. In this case, if they are not offered new interactive techniques, the quality of their knowledge will decrease irrevocably. One such technique is a game-based learning. The game aspect is only incentive to action and motivating to perform certain actions. It is aimed at increasing students' activity. At the same time, computer simulation activity, revealing the internal potential and abilities of a student, is aimed at mastering the level of practical skills that will be necessary for effective everyday practical activity. Actually, students imitate the process of their future professional activities. Our paper focuses on the digital gamification as a leading factor in the educational and learning process of law students. We offer some novel insights into this field and provide interesting suggestions and implications for the educators and the students alike.

Keywords: *digital gamification, leadership, education, learning process, law students*

1 Introduction

At present, the level of the educational and learning process is largely determined by the ever-growing need for the improvement and qualitative change in law courses teaching focused on training future professionals, who are not only properly versed in all the nuances of modern legislation, but also able to think in a creative way, find a solution of any problem and make decisions independently, guided by the acquired knowledge, the analysis of the situation and the forecast for the future. One of the means to achieve this goal is to use the potential of gamification, including digital one as a completely new way of organizing educational and learning process. Introduction of computer games in the students' learning process will not only help enhance their motivation to devote more intense and careful attention to their educational activities but will also increase the likelihood of achieving pedagogical goals (Kozhevnikova and Kartashova 2019). Obviously, gamification is by no means an alternative to the established academic education and does not imply rejection of traditional sources of information such as lectures, textbooks, monographs, etc.

However, their combination and a reasonable balance between the traditional approach and a modern technology will allow teachers and lecturers to create such learning process in which the internal potential and

abilities of students can be revealed; the process that will be aimed at mastering such a level of practical skills that students will need for effective everyday practical activities. In order to most fully reveal the significance of digital gamification in the educational and learning process of law students and justify the need for its implementation we studied the needs of modern students and their views on enhancing the potential of the educational and learning process by introducing certain forms of gamification and analysed the importance of their use in order to improve the quality of training; we propose authors' set of tools that have a didactic effect and correspond to the general idea of gamification; they can influence the increase of students' involvement in the educational and learning process.

2. Literature review

The use of the potential for gamification in general, and computer games as a form of its implementation, in order to improve the quality of the educational and learning process, has been the focus of research for more than four decades. It is believed that Malone was the first who drew attention to the capability of games to motivate and stimulate users to think and solve difficult problems (Deterding et al. 2011). The term 'gamification' was introduced much later in 2008 (Paharia 2010) and has been widely used since the second half of 2010; nowadays, it is widely used in different areas of human activities, including educational ones.

There are a number of works on the phenomenon of the use of gaming tools and elements in a non-game context in the educational environment among which are the papers by Attali and Arieli-Attali (2015), Lee and Hammer (2011), Muntean (2011), Khaled (2011), Kapp (2012), D'yakonov (2016), Orlova and Titova (2015), Varenina (2014), Karavaev and Sobolev (2017), or Oleinik (2015). Some researchers even connect gamification with psychological features such as emotional creativity (see Čábelková et al. 2020).

One also cannot ignore Russian researches of Vygotskiy (2017), or, for example, El'konin (2017) who worked on the general issues of the development of the theory of games, determination of the game's social nature and significance for the student's development in pedagogy.

3. Research methods

The methodological basis of the study is a general scientific system approach. In the process of work, we used formal logical and comparative methods as well as a technique for studying social phenomena – sociological attitude questionnaire.

4. Results and discussion

Progress is a constant development, and now there is a need for a cardinal transformation of the system of higher education, which would allow it to keep up to date. It is reasonable to say that reformative transformations should not negate all the rich pedagogic experience accumulated over decades, and, undoubtedly, modern teaching methods and techniques should include all the best practices that are available today. All the above mentioned makes the use of gamification in educational practice in demand (moreover, some researchers argue that gamification of learning process is one of the main trends of the future changes in education (see e.g. Zaitseva 2015)).

Kapp (2012) identifies two types of gamification: 'structural' gamification, which should be understood as the use of various game elements in the learning process, and 'content' one, which involves the construction of the educational process on the selected game plot following certain game rules (Kapp 2012). Taking into account the fact that modern students spend most of their free time in the virtual world represented in the form of games through which they can get useful knowledge about the real world, it is of particular importance to use the options of content gamification, an example of which are computer games, by means of integrating the latter in training courses. A game based on computer principles and mechanisms is close to understanding for the younger generation, and its multitasking is perceived by them quite naturally. In our research, we asked the students, participated in the attitude questionnaire (a total of 115 students took part in the survey), about their opinion on the gamification of the modern educational and learning process (including such a form of gamification as computer games) and 95.7% of the respondents replied that it is an important supplement to the traditional lectures and practical training, and only 4.3 % of students replied that it will divert attention from the learning material.

What are the positive aspects of applying gamification techniques? The main idea of the game-based learning approach is that the game encourages activity and motivates to perform certain actions. Computer modelling of the processes of professional activity in the educational and learning process has a great potential for the future.

A scientific publication survey and the study of Russian and international practices of introducing gaming technology into the training process allow us to say that gamification (including digital one, involving the use of computer games specially designed for educational purposes) does not have a 'destructive effect'. Although, it should be noted that several researchers indicate the possible negative consequences of gamification and believe

that its use can adversely affect educational and learning process. They argue that as a rule, playing educational games is not 'here and now': identifying him/herself with the character, a student begins to replace his real goals with the needs of the game character (Prach 2017). In addition, researchers note the possibility of psychological addiction to computer games (when the idea of introducing games into learning can cause a kind of 'habit formation', and students do not perceive the traditional learning process without playing), imperfect understanding of the game's goals (students may shift focus from the process learning to getting rewards and bonuses), and the prevalence of extrinsic motivation for the game (Pakhomova 2015).

However, in our opinion, these concerns are somewhat exaggerated. On the contrary, the combination of the educational and learning process and the game, with a clear understanding of the function of the latter by the teacher (and this is of great importance), will be especially useful.

First, the use of educational computer games in particular will not only lead to the increased activity of students, exciting their interest in the courses being studied but will also reveal the students' internal potential and abilities, and will contribute to the development of certain practical skills and abilities required for further effective practical activities, and their mastering.

Second, this will also contribute to unconscious self-education, which in its essence is a consequence of using the capabilities of the game world: with the help of large-scale and elaborate game situations, a student will not only be able to apply the doctrinal knowledge obtained from the textbooks, but also, transforming it, to get new one which he/she can immediately apply, expanding, thereby, the standardized framework of education.

Third, the positive aspects of using content gamification in the educational and learning process will also be manifested in the fact that, becoming 'psychologically addicted' on the educational and learning process, students will be more deeply and emotionally involved in it. In this case, it can be considered as a means of enlisting students in learning activities, increasing their interest in them. As it is rightly noted in the scientific literature, educational and learning activities are complex and routine ones and often cause students to feel tired and bored, and the integration of game mechanics (in our case, the introduction of specially designed computer games in the educational process – *authors' note*) can significantly affect the students' behaviour and the effectiveness of learning outcomes, triggering the trainees' subjective activity (Selevko 2005).

Fourth, gamification will not only ensure the implementation of the main tasks of the educational and learning process – acquisition of professional competencies and enhancement of learning motivation, but will also be a means of forming and mastering related competencies: organizational, communicative, and personal (Ejhorn 2015).

Fifth, as the researchers rightly note, another, no less important goal that can be achieved through gamification is minimization of negative connotations related to the educational and learning process (D'yakonov 2016). Actually, our teaching experience allows us to say that students often experience fear of the complexity of the courses they study, which is a significant obstacle to their proper perception of information which they get from the lecturer. Creating an environment that allows removing emotional stress will minimize its occurrence in students, making it possible to fully demonstrate their abilities during academic terms. It has long been noted that the emotional state of a person has a huge impact on his intellectual abilities and memorization, which is accompanied by positive emotions, so learning becomes more effective. Therefore, the use of gamification resources, including digital ones, in the learning process will increase the retention of educational material learning through the involvement of students' emotional centres (Titova and Chikrizova 2019). In addition, one should not lose sight of such a positive feature of computer games as the attitude to errors. While playing, a student learns from his/her own mistakes, tries new options to succeed, and knows that there is nothing wrong with the failure: if he/she does something wrong, there is always a chance to find the right solution. Some researchers rightly emphasize that gamification develops resilience against failures, allows students to formulate a position regarding a failure not as a negative experience, but as an integral part of learning. Since gamification creates conditions in which a failure to complete a task is not considered as a complete flop and the efforts are rewarded, a student can safely explore his/her own abilities, instead of feeling helpless and fearful in a learning situation, and then in professional activity (Kapkaev et al. 2019).

Since the students are our target audience, what do they themselves say about this? Let us consider the results of the questionnaire survey and arrange them in ascending order. So, to the question concerning the importance of the use of gamification in the educational and learning process, the respondents answered as follows (it was possible to choose several answer options or students could answer in a free form):

- lowers the degree of formalism in the educational and learning process – 25.2%;
- actualizes the knowledge gained during the lectures – 36.5%;
- increases learning motivation for academic courses – 49,6%;
- contributes to the development of the skills acquired in the learning process – 49.6%;
- relieves stress during the learning process – 53.9%;
- stimulates interest in academic courses – 74.8%.

According to students' answers, the quality of training will only benefit from the use of computer games, since they are a flexible form of training, and the functions that they perform (training, psychotechnical, relaxation, etc.) will only increase the quality of education.

What can motivate students to participate in the educational game? First of all, it is the novelty of the approach to the learning process: everything new is always interesting, especially when it is related to the virtual world. But the students' internal motives to cognitive activity, to active acquisition of new knowledge are also of great importance. Both the process of training highly qualified professionals in general and the effectiveness of using digital gamification in particular are directly related to the level of motivation of a student and the incentives for mastering knowledge, skills and abilities which are necessary for future professional activity. It is no secret that one of the topical problems in modern universities is the problem of motivating students to educational and learning process: some students lose it without its expression; others, for various reasons, lose it before graduating from university or already in the middle of training. In this case, the application of the means of inducing the student to productive cognitive activity, the active development of the professional skills and abilities comes to the fore.

As we have already indicated above, one of the main objectives of digital gamification is to contribute to the acquisition and consolidation of knowledge in a course or courses. If it is difficult to motivate a student with such a goal, it is possible to use such techniques of gamification as scores, rating, and it is desirable that the point-rating evaluation system to be in public access. In this case, students who are at the top of the ranking can be awarded at the general faculty meeting. As a rule, a high ranking position gives a student a sense of satisfaction from the efforts made by him/her, and a low one can increase the level of involvement in the educational and learning process (let us note that in the system for assessing the correctness of completed tasks, the respondents themselves gave the first place to evaluation based on in-game means – 53.9 %). In addition, it is possible to use the reward system in the form of additional rating points, which are given to students based on the results achieved in the game at the end of the term. And, if in the first case, the goal of the educational game is achieved by means of the development of the student's status-positional motives; in the second one, it is the desire to succeed and get more additional points for the test or exam for a good final grade that is developed in him/her. Let us consider the results of our attitude questionnaire again. As for the question "What will determine the interest of students in passing the game?", the respondents gave the following answers:

- desire to consolidate knowledge and gain new one as well as to develop professional skills, etc. – 16.5%;
- obtaining additional points based on the results of the completed assignments at the end of the term – 20%;
- both mentioned above – 63.5%.

The results obtained allow us to say that the structure of students' learning motivation has a complex dual nature and develops under the influence of internal and external factors, which must be taken into account when using different forms of gamification when arranging educational and learning process.

5. Implications

Speaking about the introduction of digital gamification into the process of training the students whose major is Master of Laws (training program – 40.04.01) (as, indeed, into any other law program), it should be noted that the activities of a professional participant in any form of legal proceedings basically consist of 'getting your mind right'. In relation to the criminal proceedings in particular she or he should be able to:

- analyse competently legal facts and choose the right means of suppression and disclosure of offenses and crimes;
- carry out correctly the full range of procedural actions related to investigation, consideration and resolution of criminal cases;
- carry out correctly the whole range of procedural actions to ensure obtaining reliable evidence;
- analyse, interpret, and apply competently legal regulations;
- document correctly and fully the results of professional activity in the procedural and official documentation;
- make the most appropriate decisions and carry out relevant actions depending on specific circumstances in general.

Therefore, the use of computer games in the training and learning process will not only develop professional skills and abilities, but also gain practical experience in resolving legal incidents, and develop critical thinking.

We have developed an educational computer game in the genre of 'quest' in which the investigator, the main character, should logically reflect on identifying cause-effect relationships and use them to achieve the goal set in the game, i.e. solving the crime. The player, exploring the world in which he/she is immersed, solves puzzles and

tasks that require mental effort. The game is logically structured from the point of view of legal regulation of the procedure for criminal proceedings and is a system of sequential tasks with the developed set of rules, tasks and strategies.

The main purpose of the game creation is to form specific competencies that can be directly transferred to the real world. A computer game is based on real events and, therefore, students will use real data to get the most accurate and realistic experience possible. With its help, students will be able, albeit virtually, to bring to life obtained theoretical knowledge. This form of gamification creates an image of the real attributes of the activity (in particular, virtual reality technologies made it possible to create a three-dimensional image of the scene of the incident), acts as a virtual analogue of the real interaction between the participants in the criminal process (game conditions presuppose the implementation of the forms of departmental and prosecutorial supervision, and judicial control over investigator's activity). In addition, it also creates the conditions for substitution of the real performance of professional roles and is an effective form of assessment of the knowledge and skills obtained by the students in professional training.

In order to make the game more exciting, we retreated from the plot, which was strictly linear: the game involves changing the storyline depending on the actions of the main character. In addition, taking into account the fact that the success of the quest largely depends on the 'interestingness' of the reaction of the gaming environment to the correct or incorrect actions of the person who acts as an 'investigator', we introduced the characters-prompters into the game: 'a strict teacher' and 'an experienced investigator-colleague'. They not only play an 'entertaining' role, which consists in a funny reaction to the wrong or inappropriate actions of the main character and leads to emotional release in case of making a mistake but also act as tutors and guides accompanying students into the complex world of legal acts and doctrinal sources – and this is their most important function. If a student comes to a deadlock, a person will appear on the screen and prompt him/her which law or recommendations to address to resolve the problem. If a student wants to go to the next level of the game, then he will have to open a textbook or turn to the reference-books on legal aspects. In this case, student's independent work with educational, normative, and other additional materials will encourage him/her to acquire new skills and knowledge, fill knowledge gaps, and, thereby, to strive to improve the quality of professional knowledge.

When developing the game, we relied on its interdisciplinary character integrating such courses as Criminal Procedure, Criminalistics, Criminal Procedure Acts, Theory of Investigative Activity, and Forensic Expertise. In this regard, in our opinion, the "Criminal Case" game is a kind of thing that unites them, providing a more powerful impetus to professional training. It should be noted that the students themselves consider that the game in which they can master the knowledge, skills and abilities they acquired earlier is of a great interest, since it contributes to the potential possibility for a more successful solution of problems in future practical activities: 58.3% of the respondents share this opinion. But consolidation of knowledge and training of skills obtained in the learning process by students is not the only goal of the proposed game. Considering its character noted above and the use of gradually increasing goals and objectives complexity, it helps students acquire new competencies. In our opinion, this is the meaning and the purpose of the developed product. Moreover, the use of this form of gamification in the educational and learning process also contributes to the implementation of the principle of a differentiated approach to learning: students perform tasks individually or in small groups, they can make a pause when performing difficult tasks or do them several times or even return to the beginning and perform the whole level again. The lecturer or tutor acts as a consultant and assistant, and students can ask them for help in case of any difficulties.

6. Conclusions

The study showed that in the modern world, content gamification is a rapidly developing area of training and learning scenarios with new mechanisms and platforms, which immediately engages students' attention. Pilot testing of the developed product carried out on the basis of the law faculty of the Southwest State University allowed us not only to assess the correctness of the chosen direction to improve the level and quality of the educational and learning process, to determine further activities but also helped to prove the validity of the assumption that the use of computer games in the learning process of law students leads to the students' increased proactive capacity in obtaining knowledge and broadens their outlook. An analysis of the results of the personal experience of using digital gamification showed a positive increase in students' interest in learning new material and revising information obtained earlier. In particular, during the period of testing the game "Criminal Case", there was a great deal of activity in seeking advice and clarifications from the lecturers who supervised the project; students studied coursebooks and other law resources, which resulted in an increase in academic performance.

Increasing the requirements for the quality of higher education and the training of competent lawyers is a topical issue and a condition for the development of the whole system of educational and learning process, an incentive to update its content on the basis of such principles as fundamentality, integrity, continuity and practical orientation. Challenges currently facing the academic teaching staff of higher education institutions include not

only the transfer of educational and professional content but also the process of engaging and stimulating students' interest in acquiring new knowledge.

Digital gamification is a one of the forms of motivating students that begins from extrinsic game motivation and then transforms into more meaningful intrinsic learning one. We proved that the features of its use allow us to switch to more active techniques of training students who live, develop and study in an interactive player educational space, which contribute to stimulating an increase in the level of students' activity and their interest in acquiring professional knowledge, developing critical thinking and the ability to take independent solutions in critical situations. The use of gamification in the training of future lawyers as well as other graduates develops their professional competence, forms the ability to apply theoretical knowledge obtained in training in practical situations.

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