



# Virtual Gamification and Problems of Students' Social Interaction

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## Abstract

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The article concerns the systemic problem of students' social interactions in the context of digitalization of education and usage of virtual gamification technologies in pedagogical process. The authors conducted an interdisciplinary analysis of influence of the phenomena and conditions of virtual gamification on the "vertical" and "horizontal" processes of students' social interactions, which determine constructive or destructive vectors of their socialization and professionalization in a digital society. The authors concluded that professional use of gamification pedagogical technologies can significantly reduce the social risks of digitalization of education and increase the level of safety of communicative and educational environment.

## Keywords

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Social Interaction; Digital Education; Gamification in Educational Process; Virtual Gamification



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## Виртуальная геймификация и проблемы социального взаимодействия обучающихся

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### Аннотация

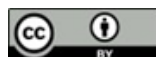
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Статья посвящена системной проблеме социального взаимодействия обучающихся в условиях цифровизации образования и применения в педагогическом процессе технологий виртуальной геймификации. Авторы проводят междисциплинарный анализ влияния феноменов и условий виртуальной геймификации на «вертикальный» и «горизонтальный» процессы «социального взаимодействия» обучающихся, определяющие в дальнейшем конструктивные либо деструктивные векторы их социализации и профессионализации в цифровом обществе. Авторы приходят к выводу, что профессиональное использование геймификационных педагогических технологий может в значительной мере снизить социальные риски цифровизации образования и повысить уровень безопасности коммуникативно-образовательной среды.

### Ключевые слова

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социальное взаимодействие; цифровое образование; геймификация в образовательном процессе; виртуальная геймификация



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## Introduction

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Development of information technologies and formation of the digital world as well as digital culture lead to transformations in various social spheres (Tawafak et al., 2018; Sorina, 2019; Khrapov, 2011; Khrapov & Baeva, 2021). The sphere of social interaction undergoes special transformations, since development of information technology transfers it into “digital”, which has been intensified against the backdrop of the COVID-19 pandemic. These events also led to scaling of distance education, which of course affects socialization and further professionalization of students, who, studying on-line, lose opportunity to socially interact both with teachers and themselves in the usual ways. This raises the question: can virtual gamification, as one of digital world phenomena, reduce risks of loss of social interaction and, as a result, increase the level of security of digital educational environment, promote constructive socialization and professionalization of students?

Virtual gamification was chosen as the subject of research for a number of reasons: first of all, gamification as a transfer of game mechanics to non-game situations is used in various social spheres, including education, secondly, games (including computer games) is a simplified broadcast of social and interpersonal interaction, which is applicable for educational purposes, and thirdly, video game industry is popular among children and young people and is embedded in the value system of zoomers.

## Definition of Social Interaction

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### ***Main Rendering of the Term “Social Interactions”***

Before revealing the problem of students’ social interaction and relationship of virtual gaming with it, it is worth giving a brief description of the very concept of “social interaction”. The term “social interaction” has been used in sociology more frequently than in other humanities by such foreign scientists as M. Weber, T. Parsons, P. Sorokin, as well as by national authors – A.N. Averyanov, N.L. Vinogradova and others. One of the theories using this term is the theory of social action proposed by M. Weber, according to which social interaction is “goal-rational, value-rational social action, oriented in meaning to the actions of others” (Weber, 1990). According to T. Parsons, social action “includes certain structural elements: people, objects, norms, values.” (Parsons, 1997). A similar interpretation was given by P. Sorokin, speaking of social interaction as about the exchange of “social actions to achieve a common goal, the exchange of ideas, convictions, opinions, information and the exchange of feelings as an expression of attitude to something” (Sorokin, 1992). It is possible to single out some other interpretations: “People agreeing on their actions by interpreting them” (D. Mead, G. Bloomer) (Mead, 1996); “The process of coordinating people’s actions by means of their comprehension on the basis of life experience” (A. Shchuts) (Schütz, 2004). The term “social interac-



tions” was put forward by domestic authors as well. For example, E.M. Korzheva presented social interaction as “the process of influence of partners on each other and adaptation of actions of one to the actions of the other” (Guichiani & Lapin, 1989). V.G. Kharcheva emphasized the axiological side of interaction: “It is relationship with the attitudes and value orientations of the interacting parties, which influence the choice of the social interaction method and regulate social behaviour and mediate certain connections and relationships” (ibid). Completing a brief overview of the diverse views on the term “social interaction”, it is also worth to analyse the usage of this term in social psychology, which focuses on the perceptual aspect. According to A.A. Bodalev, social interaction is manifested through “perception, understanding and cognition of man by man” (Bodalev, 1982); G.M. Andreeva also notes that a rather important aspect of social interaction is organization of “joint actions that allow partners to implement some common activity for them” (Andreeva, 2001).

Social interaction, thus, is a set of actions performed by individuals in the framework of social contacts in order to achieve certain goals. Such actions are mostly directed at another individual and carry axiological and perceptual loads, reflecting the state and values of both the individual and society.

Having analysed the diversity of the term “social interaction”, we can give the following interpretation: social interaction is a process of interdependent influences of social subjects on each other in the context of certain social conditions and common tasks.

### ***Social Interactions in Education***

As we have already seen, social interaction plays an important role in the life of an individual, and it performs a connecting function acting as the main form of relations within society. Education is a special type of social interaction due to its characteristics as a social institution. The main task of education as a social institution is transferring social and cultural experience, as well as socialization of students. Within the framework of education, social interaction is organized in two ways: there is a horizontal plane of connections reflected basically in relations between the students, and between teachers as well; on the other hand, there is a vertical connection between the students and a teacher, as well as between the teacher and a legal representatives of children. Thus, it turns out that a student finds himself at three levels of social interaction. At the micro- level, horizontal interactions with peers are carried out as part of educational process; the vertical macro- level reflects interactions between the students and a teacher. At the third, mega-level, interaction is taking place with other systems, up to society as a whole. These and other levels not mentioned here are in close connection, they have a social impact on each other, which can give rise to a number of problems.

Analyzing the problems of social interaction in the field of education, we will divide them into problems of vertical impact (teacher-learner) and problems of horizontal impact (learner-learner) and consider each separately.



Vertical interaction is understood as systematic, constant implementation of communicative actions of teachers, aimed at causing appropriate reactions from the students (Laudis) (Laudis, 1980). Both the teacher and the student have many forms of interaction: for example, the main problem of social interaction in the “teacher-student” system is a great difference of various socio-psychological criteria that determine each of the mentioned groups. First of all, this difference is associated with cultural and value orientations that are characteristic of students and teachers. Teachers, as a professional group, hold position of universal human values, norms and laws; they are characterized by a measured pace of life. Second, students do not fully possess patterns of social behavior and comprehend them in course of socialization, primarily at school, both in classrooms and in social situations outside of them. On this basis, students are in constant search, they are characterized by an active pace of life, which is based on emotions. From a sociological point of view, the role of a teacher within educational space is characterized as “professional”, which imposes a number of official duties and rules on teachers, regulated by teaching ethics, as well as by law. On the other hand, the role of children in educational system is not characterized as “professional”, which gives them greater freedom, both in terms of behavior and motivation. Thus, we can conclude that a number of contradictions have been created, which can cause problems for social interaction and lead to misunderstanding between teachers and students.

It is also worth noting another contradiction, which manifests itself especially strongly in the context of digital transformation of society. We are talking here about the distance between Zoomers Generation, which is represented by the learners, and Generation X, which is represented by the teacher. According to the theory of generations put forward by W. Strauss and N. Hove, all people born after 2000 belong to Zoomers. It is this generation that grows and develops in the new conditions of digital world and cannot imagine itself without Internet and virtual communication. It is possible to single out a number of features inherent in Zoomers. Thus, L.V. Lapidus and others highlight such features as digital interaction, introduction of games in the process of education and development; changes in goal-setting; change in the tools of cognition. D. Stillman also notes belonging to the digital world as one of the leading features of Zoomers. This belonging is expressed, in the fact that modern youth is strongly attached to the virtual world and sometimes does not distinguish it from the real world, which, in the presence of a number of socio-psychological problems, can lead to destructive consequences. However, in general, we can say that Zoomers communicates with the virtual space much better than previous generations, which concerns learning as well. Contemporary children learn “online”, and it's not so much about distance education, but about the primacy of Internet as an educational source: various bloggers (including popular science), social networks and applications are much more authoritative for modern youth as a source of information than usual social institutions. The COVID-19 pandemic also has a great impact on this, having pushed children to the “distance” and changed the perception of education.



Gamification as an important feature of Zoomers nature is directly related to our problem. This generation, as in the case of digitalization of reality, also experiences gamification of surrounding reality, i.e. penetration of game mechanics into real life. This is greatly influenced, in particular, by computer games industry, which has been rapidly developing in recent years. We have already mentioned in other works that games have great potential for application in education “through competitive mechanics, enhancing the feeling of inclusion and visibility, achieved with help of visual component of games, as well as an orientation towards acquiring knowledge through their practical application” (Bibarsov, 2020). The value-role aspect is also highlighted, associated with development of a sense of empathy through adoption of other role models. Computer games, being a unique kind of art, are capable of influencing the formation of moral and ethical attitudes (Zaitseva, 2015). Based on the selected features, we can conclude that Zoomers generation differs from the previous because it has stronger connections with the digital world (especially comparing to generations of teachers).

Social interaction at the horizontal level – in the “learner-learner” system is also affected by digitalization. It is observed primary in a change of the very structure of communication between students both at school and outside of it. Let us illustrate these manifestations in general terms. Internet is a kind of social space, which, as we said above, significantly replaces the real space for Zoomers Generation; quoting M. McLuhan, “media have become an extension of the human nervous system” (McLuhan, 2003). Young people of today communicate more often through various messengers, social networks, less often through forums and other sites, thus a unique situation of virtual social interaction is being created: using Internet, students not only look for information they need at school, but also make new friends, find new hobbies and clubs of interest. The interaction itself can be described using the concept of I. Hoffman: “every social interaction is based on the process of managing impressions” (Goffman, 1959). However, if in real life people work on this impression with the help of clothes, behavior, etc., then in virtual social space the same process is organized differently – for example, with the help of personal pages in social networks. In the study conducted by A.A. Shcherbakova (Shcherbakova, 2020), there are three social networks considered: Vkontakte, Instagram<sup>1</sup>, Twitter, each of which, according to the author, performs a specific function. Thus, Vkontakte acts as “the official page on which clearly verified things are posted in a neutral tone.” Students most often use this social network to formally communicate with teachers and form their own social portraits – basic data, hobbies, interest groups. Vkontakte is also used for informal communication with classmates and friends, viewing information on interests, including entertainment.

Instagram profile is “an important component of self-presentation, since every picture in my profile is published strictly according to my ideal thoughts in my

1 A social network owned by a corporation deemed extremist in the Russian Federation (Социальная сеть, принадлежащая корпорации, которая признана экстремистской на территории РФ)



head” - the author quotes the student being interviewed (Shcherbakova, 2020). Instagram is most commonly used to showcase photographs that capture the learner’s personal moments and interests. The capabilities of this social network also allow to conduct live broadcasts, as well as view other profiles. Thus, with the help of Instagram, students not only create their own image using photographs, but also follow the personal lives of their classmates, idols, and find various hobbies.

The main aim of Twitter is posting small messages on various occasions, with the possibility of maintaining anonymity. If in Vkontakte educators most often use real names, then on Twitter they are registered under various nicknames, which indirectly indicate the identity and are a kind of internal memes for their classmates, reflecting certain aspects of the personality: there is no face, because first of all it is me who is spiritual, not physical, one of the students says.

We see that the changed type of relationship “learner-learner” makes modern youth more open, talking about their personal life, sometimes even for a special show, thus creating a playful situation of a freak show – life in plain sight. Students, at the same time, use various social networks to demonstrate different levels of personal information: from official to purely personal, thus separating their social portrait. In fact, we can say that the mechanisms of social interaction familiar to the previous generation (“I am among relatives”, “I am among friends”, “I am in a team”) are reflected in virtual social space of modern youth, which is both more open and more closed to others.

Based on this analysis, one cannot fail to note the great role of modern virtual media in the process of transformation of the vertical level of social interaction between students and teachers. Here we move on to a more detailed analysis of the possibilities of gamification in overcoming the problems of social interaction, the main of which is different attitude to the virtual environment. We believe that it is gaming educational technologies that can have a beneficial effect due to the fact that gamification is a universal method of interaction for people of different ages and social status, as well as due to the powerful development of the virtual entertainment and ingression of its mechanisms into the real world.

## **The Role of Gamification in Social Interaction Issues**

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### ***Gamification and problems of social interaction***

Gamification is “transfer of game mechanics, most often borrowed from computer games, into social reality,” as Detering et al. Report in “defining gamification” (Deterding et al., 2011). This process is ubiquitous and affects not only education but other structures of social reality as well. Gamification is a part of new modality of social reality formation: a virtual social space, by which we mean an integral phenomenon, ontologically centered on a virtual information technology reality, characterized by basic signs of sociality (community, communication, social role behavior). We spoke about the manifestations of this reality in the form of social networks above, but an equally important manifestation is virtual space of a game –



this is a certain type of virtual reality generated by human consciousness and implemented with the help of information technologies. According to MY.GAMES research, 30% of video game players are youngsters between 14 and 24 years old, i.e. mostly school students (Portrait of the Russian Gamer 2020, 2020). So we can state the high interest of modern youth in virtual space, in particular, in game space.

Gamification can have a twofold effect on solving problems of social interaction – both by reducing social distance between learners and by moving it away.

Let's consider this influence in more detail. The main game mechanics – competition, leader boards, points and badges – most often involve either teamwork or personal credit, which can enhance students participation in educational process. That can “provide a quick stream of feedback between the teacher and students, enhance group activity and increases motivation to learn” (Varenina, 2014). Social interaction between learners can be organized using specialized means of gamification, for example, using the ClassCraft website, in which each learner can take on a certain role and create an in-game avatar for further learning and interaction with others learners and with the teacher. The role-playing moment here will be of great importance, because, taking a playing role, the student gains experience of social interaction through in-game interaction in a team. It is possible for teachers to integrate into educational process both specialized means of gamification and directly gamification pedagogical technologies. So, in a joint play outside of school time, for example, in the popular among students Minecraft – a “sandbox” game with great freedom of action – the teacher will be able to smooth out the vertical difference “teacher-learner” and appear before the children on an equal footing, as a full-fledged co-player, which, in turn, will affect the greater acceptance of such a teacher by a modern child.

In interactions between learners, gamification can help to create teamwork skills as well as greater cohesion within the school community. For example, in high school, you can organize small cyber sport teams that, in electives, will train in team games and compete in school competitions. With this tool, learners can diversify their interactions with peers at school by building and playing teams. In addition, this kind of electives can help to create a positive image of the institution of education, keeping up with the times. Teachers in such a system can act as mentors of teams if they themselves have such a game experience, which is important for young employees of educational organizations. The virtual space of the game can, therefore, serve as an important factor in team building and increasing the effectiveness of social interaction between learners – through team competitions or role-playing – and between learners and teachers, provided the latter are properly qualified.

### ***Risk Factors of Gamification***

This analysis would be incomplete without specifying some of the risks that may arise when using gamification both in the educational environment in general and in the environment of social interaction in particular. First of all, it is worth





noting that game as a type of activity is still an entertainment, and various value-orientating and educational aspects are still secondary in comparison with the main function – inspiration and pleasure. In addition, game, by virtue of its essence, presents a simplified, though quite accurate, reflection of surrounding reality, which affects correct perception of role-playing sets found in games. Besides excessive usage of games and specialized means of gamification can lead to a weakening of the teacher's authority, as well as a decrease in the students' sense of the seriousness of what is happening, which can affect the further learning process. Therefore, when using the means of virtual gamification, a teacher should be aware of these risks and not use such means constantly, while allotting for them, for example, extracurricular time.

Another risk-generating factor in gamification methods usage is the problem of addictive disorders, the criteria of which include: “1) excessive use, which is expressed in the fact that a person loses sense of time, spending it on Internet activities; 2) withdrawal symptoms such as tension, anger, agitation, when access to Internet is blocked; 3) tolerance – an increase in the time of Internet usage and the complication of the technique used; 4) various negative consequences, which are expressed in decrease of students' academic performance productivity, social isolation, as well as conflicts” (Baeva, 2016). It should be noted right away that learners from “risk groups” who are acutely lonely, have weak will, low self-esteem and anxiety caused by the socio-psychological climate in which they find themselves most prone to gambling addictions. To resolve these risks, additional work of teachers and school psychologists with such students is required.

## Conclusions

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Summing up our analysis of virtual gamification role in social interaction of students, the following can be noted:

1. Social interaction is a process of interdependent influences of social subjects on each other in the context of certain social conditions and common tasks. In education such interaction is observed at three levels – the horizontal micro-level in student-student relationship, the vertical macro-level in teacher-student relationship, as well as in the mega-level of relations connecting students with other social institutions.
2. Virtual gamification, which is the process of transferring and using game mechanics from virtual space of a game in a real social space, can have a particular impact on solving emerging problems due to the peculiarities of the modern generation, as well as the on-going process of digitalization. Virtual gamification using both specialized means and directly games can help organizing interaction between students on the basis of teamwork and a competitive spirit, make learning and extracurricular time for them more meaningful and familiar in the perceived format. For a teacher, virtual gamifi-



cation is an opportunity to reduce the intergenerational gap between themselves and students, thus making the educational process more personal for the latter.

However, such risks of gamification as the loss of seriousness in relation to learning process and formation of a simplified view of social reality, as well as the various addictive disorders must be taken into account. All these risk-generating factors can manifest themselves only if a teacher misuses the virtual gamification tools, so we advise to use such tools in dosage, as additional extra-curricular activities.

### Author's Contribution

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The authors' contribution consists in considering the influence of virtual gamification technologies and its phenomena on the "vertical" and "horizontal" processes of "social interaction" of students' social interaction, determining, in the future, constructive or destructive vectors of their socialization and professionalization in a digital society. The authors are convinced that the professional usage of gamification pedagogical technologies can significantly reduce the social risks of digitalization of education and increase the level of safety-communication and educational environment.

### Acknowledgements

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The authors express their gratitude to the Russian Foundation for Basic Research for supporting the project, grant No. 19-29-14007 MK "Assessment of the impact of digitalization of educational and social space on a person and the development of a safe system".

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