PEDAGOGY AND VIRTUAL REALITY. PRACTICAL APPLICATIONS

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Abstract

This paper presents a succinct study of education in the current context from the perspective of the process of learning, of the method used, namely play, of educational objectives which can be achieved through the means of applying games in the process of teaching-learning-evaluation and that of using technology, particularly virtual reality, so that they serve the educational requests of individuals in nowadays society, namely generation Z.

Keywords: *learning, teaching methods, experiment, VR, contemporary pedagogy*

Introduction

Current society is characterised by an impressive technological evolution, which influences both the human way of thinking and their everyday interactions. This generates the appearance of a new individual pattern, which places itself on a different position to its predecessors, pertaining to the Y and X generations. Compared to millennials or baby-boomers, the emerging generation were born and are growing up with technology, having access not only to the Internet, but to devices that are constantly improving or apps that are permanently updated for the very purpose of serving the needs of the consumers as adequately as possible. As a consequence,

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generation Z is connected to the concept of change, diversity and juggling several actions at the same time because of the very fact that they are digitally native.

Starting from this premise, the process of teaching-learning-evaluation must become updated and must meet their requirements, so that it can manage to attract them and open their appetite for learning. If technology is part of their life, then it must be integrated in the educational process. Technological evolution is happening continuously, whether education systems and teachers/trainers agree with this phenomenon or not. It follows that the solution does not presuppose ignoring these new technologies, but accepting them rather, and finding a way of integrating them into education. Just like computer games evolved into being developed for a somewhat educational purpose, so could virtual reality or augmented reality constitute useful tools in education if used and built properly.

In the beginning of this paper, I will debate several theoretical concepts, such as learning, the game, the didactic and dramatic game, the development of socio-emotional competencies, the importance of empathy, inclusive pedagogy and the succinct characterization of the profile of the generation Z individual. In the last part of the paper, I will present several examples of practical applications of virtual reality in several fields of the educational process, as well as several examples of applying this technology with a view to facilitating an inclusive climate, bearing in mind my topic of research that is related to social inclusion.

Human Learning

Learning is a complex process that accompanies the individual throughout their life and enables them to acquire knowledge, develop skills and attitudes to help them solve

problematic situations, build their own personality and guide their interaction with those around them. From this point of view, "learning is not only the process of acquiring the knowledge, skills acquired by humankind, but also the process of building the skills necessary for the use of this knowledge and skills"[113]. The process of learning can be intentional when people make an effort to understand the meaning of their actions and take over the acquired information that they then apply in solving other situations, or unintentional, when the child or the adult does not make the effort to retain something of that chance. Every situation that people encounter throughout their life can be a learning experience if they are aware of the way in which, influenced by the context, they chose to act. Starting from this idea, learning can be done anytime and anywhere according to the principle of *lifelong learning*, which highlights the fact that people learn throughout their life if they can afford it. In this respect, it can be seen that learning is strongly related to elements such as cognition, affectivity and motivation, is characterized by dynamism, and the ultimate goal is "the adjustment or adaptation of the individual to the environment in which they live"[114].

In learning, mentally structured provisions are commonly referred to as psychological mental schemes. Depending on the way these schemes are built, there are four types of learning: cumulative, assimilation, accommodative, transformative. The first type, cumulative learning, translates into the mechanical one, specific to the first years of life or certain situations, when what is learned does not have a personal significance, for example a telephone number. Learning by assimilation or appropriation, the most common type, involves "a connection between the new

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[113] C. Popa, *Introducere în psihologia educației*, Glissando, București, 2013, p. 10.
[114] *Idem*, pp. 18, 11.

element and a pattern or model that is already established"[115]. "When the new element cannot be connected to an existing pattern, because that information is something that cannot be fully understood or cannot be related to, then learning happens by means of accommodation or transcendence that involves "breaking parts from an existing scheme and its transformation so that it can be associated with the new situation"[116]. Transformative learning refers to "personality changes or […] simultaneous restructuring of an entire group of patterns or patterns […] that usually arise as a result of a crisis caused by events perceived as urgent or inevitable, thus defending the need for the individual to change and to advance"[117]. The third and fourth types of learning, especially the latter, involve a greater effort on the part of the individual, greater the energy consumption, as well as the feeling of well-being and relaxation subsequently generated. Typically, in most learning contexts, assimilation is used, although the complementarity of the three types of learning, assimilation, accommodating, and sometimes transformation can ensure the acquisition of skills that are useful for human development.

Learning is also influenced by sensory perceptions, because through the senses people contact the surrounding world. Thus, the VAKOG model, which reflects the five learning styles, is based on the availability of each individual to more easily store information, depending on the context and stimuli, by applying the filter to a particular sensory area, namely: visual, auditory, kinaesthetic (olfactory and gustative). Consequently, there are people who are more likely to remember the information if it is, for example, presented visually or contains olfactory items or

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[115] Knud Illeris (ed.), *Teorii contemporane ale învățării (Contemporary Theories of Learning)*, Trei, București, 2014, p. 31.
[116] *Idem*, p. 32.
[117] *Idem*, pp. 32-33.

simply accompanied by dance. Once identified and applied in teaching and learning, learning styles can bring significant improvement in the learning process, facilitating understanding and acquiring of knowledge.

In conclusion, learning is an omnipresent phenomenon in the existence of a human being, because every situation with which they can be confronted can become a conscious learning experience if effort is invested in understanding its significance in order to take up useful lessons and other future problems. Schweinhart, quoted by other authors, states that "we learn from what we see, feel, touch, smell and do. We develop human social capabilities for language use, understanding, reading, writing and interpretation. These new skills enrich our lives with entire fields of knowledge, but they do not replace the immediate world of our senses and activities. We learn from what we do"[118]. Consequently, one of the ways in which this phenomenon can be facilitated and which fosters an active learning process is the use of the game in education.

Game. Didactic Game, Drama Game and Computer Game

The game is a form of primordial manifestation through which people seek to understand themselves and the surrounding world. Activities such as throwing an object to be returned by the supervising adult, testing each new item through the mouth, walking along the sidewalk etc. are considered playful activities whereby any child goes into the natural course of human development. The game is a playful activity aimed at achieving a goal with clear rules that cannot be overcome, designed precisely to cause the human being to come out of the comfort zone and to use their body, mind, and soul to fulfil the objective to which

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[118] Marcia L. Nell, Walter F. Drew, in collaboration with Deborah E. Bush, *De la joc la învățare (From Play to Practice)*, Trei, București, 2016, p. 28.

each of the participating member tends. The game implies a high level of immersion and interactivity that gives the child the optimal space to learn to focus their attention and all their creative strength to solve the proposed situation. Thus, through the game, one achieves "the spontaneous engagement of a human subject in an activity lacking a practical purpose - conscious utilitarian"[119] and it becomes possible "to involve and at the same time the personal freedom necessary for experimentation"[120].

Considered a child-specific activity and meaningless with older age, play is gradually being replaced by other activities in human existence, neglecting that it is "a natural means of exploring the world and providing meaningful knowledge through experience directly"[121]. Being a witness of an experience is not enough to understand its structure; the individual has to participate directly to get in touch with the elements and thus understand how they turn under their actions. In Piaget's view, also taken over by other authors, the active involves combining two perspectives: the actual thing with the material object and working through the interaction with the others as part of the effort of the whole group. In this way, "a decisive mental state is reached, in which children have to communicate with each other. This is an essential factor in intellectual development. Cooperation really means cooperation"[122]. The direct experience allows "the development of notions based on the observation and the experience of the consequences of their own actions"[123] and thus

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[119] M. Diaconu, „Dezvoltarea copilului prin joc", *Educația și dezvoltarea copilului*, ASE, București, 2007, p. 143.
[120] V. Spolin, *Improvizație pentru teatru (Improvisation for the Theatre)*, UNATC Press, 2008, p. 15.
[121] Marcia L. Nell, Walter F. Drew, with Deborah E. Bush, *op. cit.*, p. 29.
[122] *Idem*, p. 125.
[123] *Idem*, p. 126.

opens the way to a profound understanding of things through a physical knowledge, mediated through the senses, which then favours the assimilation of knowledge and logical knowledge. In this way, active learning, which involves both physical and cognitive, emotional and social development, is facilitated.

Starting from the idea that the game is a method through which knowledge can be achieved, it has been introduced as a working tool in educational systems, especially alternative ones such as Montessori, Waldorf, Step by Step etc. which recognize its usefulness and benefits in the child's harmonious development. Therefore, the game can acquire clearly defined instructive content and can accomplish a pedagogical purpose, turning into the didactic game. Comenius is the first to analyse and highlight the usefulness and benefits of the game used in the teaching-learning-evaluation process. He advocates transforming the school into a place of universal play where classical frontal teaching is combined with practical experimentation so that information is understood by children not only at the mental level but also physically and emotionally, cognition being better substantiated and long-lasting. Through play, as Plato observes, one can easily see the child's skills and inclinations towards a particular field of activity. Therefore, "every school can become a universal playground, if we strive to orientate the natural fund in a pleasant way as soon as it manifests itself. For the very human nature invites us to all that is human. It would be harder to hinder it, but is it not easier to manage than to hinder it?"[124]. At the same time, Comenius emphasized, if the game is brought to school, then children would be more pleased to spend their time learning, because this would also be done in a relaxed and enjoyable manner, which does not exclude the degree of seriousness with which the educational process is treated.

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[124] Comenius, *Pampaedia*, Editura Didactică și Pedagogică, București, 1977, p. 89.

Playing in education does not mean entertainment, it means the orientation of all creative forces to solve a given requirement, within well-defined limits. As mentioned in the previous paragraphs, play implies a profound and assumed commitment that determines earnestness and responsibility in action. The game differs from playing for having fun by "consciously including reflection, allowing participants to think deeply and find a new type of understanding inside"[125]. In this respect, the game can be a "learning exercise, in which children can be placed in various formative playful contexts"[126]. Therefore, they can acquire or verify the knowledge they acquire, understanding it not only cognitively, but also physically and emotionally, within a relaxed climate in which they feel accepted for what they are, without being judged or criticized.

This last aspect is particularly important when it comes to applying the game to the educational process. Often, as a reminiscence of an authoritative teaching system, the teacher's tendency is to criticize and punish or reward the child's performance at a certain point in time. The pedagogy of the game eliminates this approval and disapproval: in a game you cannot be wrong, you can reach the goal or not, and that only means you have to develop certain skills that you lacked at the time. This must be understood and applied by the teacher, who needs to understand the notion that each child is a distinct, unique and unrepeatable individual, therefore the teacher's behaviour must be differentiated, centred on the needs of each student. Thus, the tendency for confirmation from the coordinator diminishes, leaving room for the child's personality to manifest and evolve. In this way, play can be a useful tool in acquiring knowledge, skills

[125] Marcia L. Nell, Walter F. Drew, cu Deborah E. Bush, *op. cit.*, pp. 31-32.
[126] Horațiu Catalano, Ion Albulescu, *Pedagogia jocului și a activităților ludice (The Pedagogy of Play and Ludic Activities)*, EDP, București, 2018, p. 132.

training and skills, as it "harmoniously blends the tasks specific to the game with the tasks and functions of learning"[127].

In the twentieth century there is a concern to centre the educational system on the student's educational needs and advocates introducing the game into the school environment. This fact materialized with the emergence of the theatre in education and drama in education, which take on the theatrical techniques, that they adapt and insert into the educational environment. Dramatic play is based on the same principles as the rest of the play activity, with the difference that the participants are assigned roles and use their imagination to create new spaces in which they act according to the relationships between the assumed roles. Applied in education, dramatic play integrates the participants' cognitive, emotional, social and psychomotor skills, as they think, feel and move together towards the same goal[128].

Starting from the idea that sometimes the child needs to imagine reality in order to better understand it[129], the game creates space for the transformation of objects, space, self and others, favouring the acquisition of new skills, interacting with others, and transforming reality into an imaginary[130]. Dramatic play involves creating imaginary situations that are very similar to real ones. In this new world, created exclusively by the overwhelming imagination of children, they learn to adapt to rules they themselves set, which they keep in mind, adapting their actions and words according to them. This process favours the development of self-controlled behaviour, "due to the intrinsic

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[127] *Idem*, p. 135.

[128] Helane S. Rosenberg, *Creative Drama and Imagination*, Holt, Rinehart and Winston, 1987, p. 5.

[129] R.M.Jones, *Fantasy and Feeling in Education*, Harmondsworth, Pelican, 1972, p. 22 *apud* R. Wooster, *Contemporary theatre in education*, Editura Intellect Books, Bristol, 2007, p. 9.

[130] Helane S. Rosenberg, *op. cit.*, p. 9.

strong motivation to stay in the game"[131]. In this respect, Roger Wooster observes that game-mediated discovery can be linked to the human potential for changing and conceiving change, thus giving children the opportunity to accept themselves and the surrounding world[132].

Some of these concepts are included in the structure of computer games that have evolved over time from simple matrix matching games, such as Matrix, to online games that take place in real time, developing collaborative skills, multi-tasking and rapid problem solving. Indeed, imagination is less stimulated in computer games, as spaces are already created and supplied to the user, but at the same time the user uses their imagination and creativity to solve the problems they face. Therefore, today's computer games are much better thought out and structured, starting from the concept of storytelling. At the same time, some of them introduced educational elements, being constructed from real historical data such as: Battle Field, where the story relies on World War I events, Call of Duty, World War II; Titan Quest, Ancient Greece.

Consequently, play, regardless of its form, "provides the perfect context for developing social and emotional skills"[133].

The Development of Socio-Emotional Skills and Empathy through Play

In order to function in society, the individual needs, in addition to cognitive acquisitions, to develop their social and emotional skills that will guide their behaviour in their relationship with their fellow men. In general, much attention is paid to individual cognitive evolution and the social and

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[131] Marcia L. Nell, Walter F. Drew, with Deborah E. Bush, *op. cit.,* p. 62.

[132] Roger Wooster, *op. cit.,* p. 2.

[133] Marcia L. Nell, Walter F. Drew, cu Deborah E. Bush, *op. cit.,* p. 62.

emotional side is neglected. Affective and social development must include the following components: "self-regulation and emotional self-awareness; knowledge and social understanding; social skills; social trends"[134]. From this, the logical idea derives from the fact that in order to be able to read the others, it is first necessary for the individual to know themselves.

The game, as we have seen in the previous chapter, provides the premises for such knowledge that goes beyond possible barriers and blockages in communication, and which can support healthy human relationships. Therefore, the knowledge baggage of the human being must encompass both intrapersonal skills, such as "the ability to access, understand and differentiate one's own feelings"[135], as well as interpersonal, such as: "the ability to observe, to distinguish moods, temperaments, motivations, intentions, emotions and attitudes"[136]. In order to provide a comprehensive understanding of social and emotional skills, I took the following definition: "These skills include the recognition and mastery of emotions, the development of feelings of care and protection against others, establishing positive relationships, making responsible decisions, and controlling difficult situations in terms of decision-making and ethics. These are competencies that allow children to calm down when they are angry, make friends, solve conflicts in a respectful way and make ethical and secure decisions"[137].

Through the game, children learn to be attentive to their own needs and find their personal boundaries precisely because of their interaction with others. At the same time, they learn to listen to others and be available to them, learning to give in in

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[134] *Idem*, p. 61.

[135] A. Moldovan, *Teatrul ca joc și metodă de formare*, Tritonic, București, 2016, p. 100.

[136] *Ibidem*.

[137] CASEL, 2011 *apud* Marcia L. Nell, Walter F. Drew, with D.E. Bush, *op. cit.*, p. 62.

order to win. The confrontation between *myself* and *the other* is how the two players shape their personality and adjust themselves to one's own person and to each other. Team play, most commonly recommended for use in today's society, dominated by competition and pressure, and a strong isolation, has a collaborative character, which means that "it is based on the ideas of others to create a whole reflecting everyone's contributions. When those who play face obstacles in what they build, they solve problems by collaborating. When they do not agree with a particular approach, they resolve their misunderstandings by communicating with each other. These interactive experiences lead to the development of empathy"[138].

Empathy is defined as "a species of affective communion, through which one identifies with another person, thus measuring their own feelings; [...] a mental state through which an individual identifies themselves with another person in the group, or feels their condition"[139]. Consequently, empathy is a psychic phenomenon through which a person can understand and feel what another person thinks and feels at one time. In order to be able to connect to someone else's emotions, it is necessary for every being to have the willingness to be self-aware, as "the more we are more open to our own emotions, the more we are able to interpret the feelings of others"[140]. After the first two years of life, with the formation of self-concept and the awareness of the difference between one's own person and another, the child can distinguish between their feelings and those of the person with whom they interact, signifying that empathy begins to develop. If at first, they work on the basis of motor imitation, that is, they

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[138] *Idem*, p. 31.
[139] Stroe Marcus, *Empatia*, Academia RSR, București, 1971, p. 10.
[140] Daniel Goleman, *Inteligența emoțională (Emotional Intelligence)*, Curtea Veche, București, 2000, p. 137.

mirror what they see outward, for example, they see their mother crying and brushes off her tears at age two, "they become more sensitive to any hint that reveals what the other actually feels"[141].

A relatively recent study which appeared in 2005, „Grasping the Intentions of Others with One's Own Mirror Neuron System"[142], developed by Professor Marco Iacoboni of the UCLA Cognitive Neurology Department, presents the idea that empathy is actually due to the existence of mirror neurons that allow for the mirroring of the other human's condition. Thus, "the exchange of transport of affectivity from one individual to another is a living process; neural mobilization, in this case, is possible with this familiar psychic process: imagination"[143].

In this respect, one can see how play, especially drama, allows the development of empathy because, during the playful activity, children "wonder and imagine *What if?*; imagination is expressed through play"[144]. Moreover, they must constantly manage the relationship with their peers so that they can together meet the goal set in the game. At the same time, it is relevant to bear in mind Goleman's statement in his work, corroborating information from several studies, namely that empathy is an indicator of human prosocial and ethical behaviour. In this way, "as people are more empathic, they are more favoured by moral principles and, consequently, resources allocated to the needy"[145]. This explains, for example, how today's young people, who give little time to being in touch with themselves, are more

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[141] *Idem*, p. 148.
[142] Marco Iacoboni, „Grasping the Intentions of Others with One's Own Mirror Neuron System", *PLOS Biology*, published 22nd February 2005, accessed 9th June 2018, https://doi.org/10.1371/journal.pbio.0030079.
[143] Bogdana Darie, *Curs de arta actorului*, UNATC Press, București, 2015, p. 64.
[144] Marcia L. Nell, Walter F. Drew, with Deborah E. Bush, *op. cit.*, p. 131.
[145] D. Goleman, *op. cit.*, p. 148.

likely to be indifferent or ignorant of their peers, or even adopt behaviour aggression or violence against them.

In conclusion, socio-emotional skills, including empathy, provide a healthy human interaction based on mutual understanding and respect.

The Pedagogy of Diversity

Contemporary society faces diversity in all areas of activity. An education linked to the current context implies the acceptance and tolerance of this diversity, regardless of the way it occurs: gifted children, children and people from disadvantaged backgrounds, children and people with learning difficulties, deficiencies or disabilities, people of ethnic origin, religion, different sexual orientation, examples can continue, thus meeting the aspirations of an inclusive community.

The term inclusion, introduced from the 21st century refers to "a set of measures and actions in many areas to combat social exclusion and ensure active participation of people in all aspects of the economic, social, educational, cultural and political life of society"[146]. Inclusive education implies "removing all barriers to learning and ensuring the participation of all those at risk or vulnerable to exclusion and marginalization"[147], and the use of this pedagogical model can build "the foundations of an open and non-discriminatory society that encourages people to live together and to respect each other"[148].

The Characteristics of Generation Z

Generation Z is made up of people born after the 1990s, namely 1994, and raised in the 2000s at the same time as

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[146] A. Gherguț, *Educația incluzivă și pedagogia diversității*, Polirom, Iași, 2016, p. 26.

[147] *Idem*, p. 29.

[148] *Idem*, p. 28.

technological developments. Therefore, they are digitally oriented, and their identity is determined by technology that has influenced them decisively[149].

The communication of Z individuals is direct and informal, and socialization for them is an important element of their existence, as well as self-affirmation, regardless of age. They are a generation that has become accustomed to being self-taught because of the ability to check the information on the Internet anytime, anywhere. They are endowed with better entrepreneurial qualities, which appear not as a desire to have impressive financial status, but as a natural need to do more things at the same time and to work for themselves, unlike Gen Y, who felt the desire to go through a series of experiences. People in the Z generation are trustworthy, somewhat tolerant, given the degree of diversity they are exposed to, they are more optimistic about the future, able to share their attention in several directions at the same time and more realistic about a job.

On the other hand, individuals of the Z generation suffer from a pronounced lack of concentration of attention, hence the tendency to be superficial in their actions; they are materialists and believe that things are what matters; they have little capacity to solve a problem, and it is difficult for them to analyse a situation, contextualize it and make a decision; they display lack of impetus and ignorance when it comes to community participation[150]; they are individualistic and self-centred, which is why they do not know how to work in a team[151]; they feel a deep sense of loneliness, partly due to the fact that they are always

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[149] Anjali Singh, „Challenges and Issues of Generation Z", *IOSR-JBM*, vol 17, no. 7, 2014, p. 59.
[150] A.P. Singh, J. Dangmei, „Understanding the generation Z: the future workforce", *SAJMS*, vol. 3, no. 3, pp. 2-3.
[151] Anjali Singh, *op. cit.*, p. 60.

concerned about what is happening on the phone instead of paying attention to people around them[152].

Therefore, Z-generation individuals are more available from some perspectives, while they lack in certain skills, partly because technology has deprived them of the way they have determined the metamorphosis of human interaction.

Virtual Reality

Virtual reality (VR) is part of the new media, its definition being fluctuating and continually adjusting. What is certain, however, is that the way VR is viewed by field practitioners differs from the concept conveyed by the media and marketing departments. The term is composed of the noun *reality*, which refers to "a place that exists and that we can experience"[153], and the adjective *virtual*, which means, according to Webster's New Universal Unabridged Dictionary, "being in essence or effect, but not in fact"[154].

The authors William Sherman and Alan Craig establish four key elements for defining virtual reality, namely: "virtual world, immersion, sensory feedback, interactivity"[155]. Starting from these key elements, they define the concept of virtual reality as the "medium composed of interactive computer simulations that sense the participant's position and actions and replace or augment the feedback to one or more senses, giving the feeling of being mentally immersed or present in the simulation (a virtual world)"[156].

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[152] Katrina Trinko, „Gen Z is the loneliest generation and it's bigger than social media", *USA Today*, published 3rd May 2018, accessed 9.06.2018.

[153] William Sherman, Alan Craig, *Understanding Virtual Reality*, Morgan Kaufmann, San Francisco, 2003, p. 6.

[154] *Apud Ibidem*.

[155] *Ibidem*.

[156] *Idem*, p. 13.

Virtual Reality is increasingly being used, its applicability in various areas already being a record. Thus, for example, it can be applied in education to meet several objectives, such as: gaming learning, distance learning, special education, architecture and design, philosophical theories, skill training, visiting places where access is more difficult (North Pole, Hawaii etc.) or impossible (other periods of time, e.g. medieval times, World War I[157] etc.), linguistic immersion (to be able to learn a foreign language, the learner can be immersed in a space where only that language is spoken so as to practice the knowledge)[158].

Virtual reality can be extremely beneficial for the development of empathy capacity because the participant has the opportunity to perceive reality from another perspective. Of course, all done in a virtual way, which eliminates the cognitive effort made when trying to put on someone else's shoes, that is, to think about what another person feels and thinks, but which at the same time gives accuracy to the experience (be it a space or the body of another person). I chose to describe three of the examples I found, the topics of which I find relevant to my research topic *applied theatre for social inclusion*.

The first is an experiment conducted in 2003, run under the direction of Jeremy Bailenson. They chose to highlight stereotypes related to the elderly, choosing as a target audience the teenagers. Thus, a teenager was transformed with virtual mirror, and another was connected with virtual reality. The two had a discussion, and what was noticed was that after a certain time the conversation was based on stereotypical ideas about old age. At the end of the experiment, by applying questionnaires to

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[157] „Virtual & Augmented Reality in Secondary Education", *CLASSVR*, accessed 9.06.2018.
[158] Marianne Stenger, „10 ways Virtual Reality is already being used in Education", *informED*, published 27.10.2017, accessed 9.06.2018.

subjects who had grown older themselves, they found that it was now harder for them to resort to prejudices or stereotypes when they had to talk about the elders. Returning to the VR method, Jeremy Bailenson has over time developed several experiments whose purpose was and is the elimination of prejudices and stereotypes in human interaction[159].

The following two examples relate to applications of virtual reality in working with children suffering from a lower or higher level of autistic spectrum disorders. The first case relates to the experience of the students of Mathieu Marunczyn, a professor at the Jackson School in Victoria, Australia, when they used Oculus Rift. He works with a group of pupils with special needs, some of whom have autism, and have experienced a space trip among planets and stars through a guided tour of virtual reality. Student response was positive because they were much more excited, calm and relaxed after experiencing VR[160].

The last example is the reference to an article that analyses the benefits that RV has in working with autistic children. Thus, virtual reality proves "an effective tool in helping autistic children learn social interaction and nonverbal cues"[161]. Virtual reality has learning benefits as it can model or adjust experience based on individual educational requirements. Experiments with children on the autistic spectrum disorders have shown that they have improved their performance in social tasks, such as "making eye contact while communication or performing socially appropriate manners. However, despite the positive result, the researchers

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[159] Bailenson, Jeremy, „How experiencing discrimination in VR can make you less biased", *Big Think*, published 22.05.2018, accessed 9.06.2018, https://youtu.be/LSUs8m6LD24.

[160] Benjamin Herold, „Oculus Rift Fueling New Vision for Virtual Reality in K-12", *Education Week*, published 26th August 2014, accessed 9.06.2018.

[161] Jung Yeon Choe, „Understanding the Potential of AR and VR for Autistic Children", *Virtual Reality for Education*, published 12.04.2018, accessed 9.06.2018.

recognized a limitation of the realism of social interactions when in controlled environments"[162].

Practical Applications. Game/activity proposals

As I see the lack of empathy and the desire to understand the other, my proposals address the virtual reality from these perspectives. The age group I'm thinking of applying them to includes pre-adolescents and adolescents, i.e. 11-18 years, although it can be extended up to 24 years, given that until that age the young person is in a period of prolonged adolescence. I chose this age because it is still at an age of training and finalizing their personality and, at the same time, very sensitive and influential. Therefore, I suggest creating exercises to foster the development of socio-emotional skills and empowerment, and to combine the three types of learning, assimilation, accommodation, transformation.

1. Bullying case. Creating an application where the teenagers, both the victim and the aggressor, experience situations opposite to those identified in the everyday. In the case of the victim, I do not refer to the situation of the aggressor, but to the assertive person, who can communicate what bothers them, knows how to impose the limits clearly and maintain their verticality (to the situations in reality in which only by the physical position of the humility they adopt, attracts the aggressor at the psychic level). In the case of the aggressor, an application can be created to witness a situation where a person close to them in the virtual reality is a victim themselves. Thus, they have the opportunity to experience what the other feels, which can lead to a change in attitude, so that it is a type of transformative learning.

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[162] *Ibidem.*

2. Case of a person with motor disabilities. Creating an application where a person in a wheelchair can walk, run, play, and spend time with their fellow humans. And its reverse, that is, an application in which the person receives an avatar that cannot walk and thus understands the physical and social challenges faced by a wheelchair user.

Conclusion

Society poses a series of challenges that the individual needs to learn to overcome. This can be accomplished through learning that is not only centred on cognition, but also emotion and social gathering. The combination of the three types of learning, assimilation, accommodation and transformation in the activities proposed in the educational process ensures the complete formation of the human being. These educational desiderata can be achieved if the game becomes a recurrent method in the teaching-learning-evaluation process. In addition, they can be complemented by new media such as virtual reality, which favours experimenting with another perspective angle. In this respect, what each of us can do is to keep up-to-date and connect with the needs of those with whom they work to optimize their learning experience.

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Darie, Bogdana, Curs de arta actorului, UNATC Press, București, 2015
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