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**The Educational Contribution of RPG Video Games:  
Modern Media in Modern Education**

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## DECLARATION

I declare that I have written this bachelor's thesis on the topic of the Educational Contribution of RPG Video Games exclusively by myself and that all the sources used during writing were properly cited.

Prague 29th March 2014

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**TITLE OF WORK:** The Educational Contribution of RPG Video Games: Modern Media in Modern Education

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**ABSTRACT:** The subject of this topic is to research the potential contribution of RPG video games in the field of modern education and teaching. This thesis is intended for all (prospective) teachers, as well as parents, who might not have much knowledge in this particular field and who wish to understand their importance and possible benefit for contemporary children and students.

**NÁZEV PRÁCE:** Vzdělávací příspěvní počítačových a konzolových her žánru RPG – moderní média v moderním vzdělávání

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**KLÍČOVÁ SLOVA:** videohry a počítačové hry, žánr RPG, moderní vzdělávání, kritické myšlení, výuka jazyka, motivace studenta

**KATEDRA:** Katedra anglického jazyka a literatury  
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**ABSTRAKT:** Tématem této práce je zkoumání potenciálního příspěvní počítačových a konzolových RPG her na poli moderního vzdělávání. Práce je určena všem (potenciálním) učitelům a rodičům, kteří o těchto hrách příliš mnoho nevědí a přejí si pochopit jejich důležitost a případný přínos pro současné děti a studenty.

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# **1 INTRODUCTION**

## **1.1 Video games in the local context**

Video games and electronic media in general are nowadays an inherent part of children's entertainment and provide an equally important and time-consuming hobby, when compared to books, television and sports. Not long ago, especially within the context of the Czech Republic, video games were slightly unacknowledged and neglected by the majority of the population – the tradition of video gaming was weak, especially when compared to western countries. Over the course of approximately twenty years, video games in the Czech Republic have established themselves almost from scratch to become an integral part of children's life – a time that is unprecedented and incomparable to almost any other western country, where video games in general started in various forms much earlier and people got used to them much easier. Japan, United States and Great Britain all had companies combining early gaming consoles (including public ones, where it was possible to play a game for a while with spare coins) and home computers with the aspect of gaming, resulting in a colourful history and tradition of gaming in those countries (companies like Nintendo or Atari are perceived as founding fathers of the gaming industry and they have both been in the video game business for around forty years). However, in the Czech Republic the situation could not be more different. Not only were games or computers previously unavailable to anyone but a very limited group of privileged engineers working in IT sector for the state, they were also neglected and nearly vilified by the government in light of the fact that they were a symbol of western culture and lifestyle; an enemy of the regime.

This contracted insight into the tradition of video games in the context of the Czech Republic serves one purpose – to help understand that while in some countries (e.g. the

previously mentioned United States) it was rather common for the nowadays generation of adult parents or teachers to play video games (of some sort) in their childhood (thus resulting in a much more understanding and positive approach when their children or pupils do), it has little to no tradition here. Nevertheless, even being accustomed to games from the past is not automatically a salvation – video games are changing faster than any other possible media and they have developed a complex nature (and therefore usefulness in this topic) not very long ago. Previously, they were more about hand-to-eye coordination and fast reflexes than critical thinking. “Parents of all kinds can learn to play video games, but those who grew up with video games themselves are already raising the next generation of children—a six-year-old who played the Atari VCS in 1978 was thirty-five years old in 2007. These parents must play games with their kids just as a previous generation watched westerns or read comic books with them. And before they do so, they must begin playing games critically themselves, perhaps unlearning decades of treating video games as mere distraction” (Salen 136). The rapid increase in popularity of video gaming therefore sometimes comes into conflict (at least on the theoretical level of understanding and sympathies towards such a hobby) with refusal from the previous generation (most importantly for this essay, the generation of nowadays working and fully-qualified teachers). A brief socio-psychological contemplation on the topic of why video games are so popular and why it is important for teaching and learning will be provided further, but this whole thesis should mainly work as a guide, providing information for those parents and teachers who do not understand the world of virtual gaming and are not yet willing to see its contribution to a child’s education in the contemporary era.

## **1.2 Main goals of the thesis**

The aim of this thesis is to give a clear introduction to the issue and to summarize the possible positive outcomes of videogames in the field of education and child psychology and further development. It should also try to disprove some of the prejudices and negative myths related to video games, while at the same time remaining unbiased. It must be made clear that this paper is not going to recommend the heavy playing of video games or forcing them into areas where they do not belong – and may be redundant or simply useless and harmful, so any form of excessive gaming is not and would not be encouraged. The most important focus of this thesis is to understand how to comprehend video games and gaming environments and ecologies in order to use them for good, such as connecting the entertainment the children are already occupying themselves with to a lesson of any sort or global problem solving and general improvement of intelligence in the larger picture. Also, the best possible examples will be sought and presented through an explanation and description, so no further expertise in the area of video gaming should be necessary to understand the general point of the thesis.



## 2 THEORETICAL PART

### 2.1 Specification of the term “video game”

The name of this thesis includes collocation “video games”, which deserves further explanation. Although there exists no official authority settling down clearly and definitely the vocabulary of gaming, this term is commonly used in the world of digital gaming with an absolutely clear meaning, although it is a little bit misleading for someone who is not interested in it (such as a teacher or a parent). The term itself incorporates the word *video*, which is clearly leading to the idea that video games are only those games played on video-game consoles (which are special electronic devices dedicated almost exclusively to playing games created specifically for them, for example any type of PlayStation).

This might seem to be slightly confusing, but the truth is that under the title video games are gathered *all* the electronic, digital games of various types. Naturally, it includes the games for previously mentioned video game consoles, but also games for personal home computers (further referred to only as “PC” games), games for any portable device such as mobile phone or tablet, games played in web browsers and any other possible digital game. The adjective *video* is here only to provide a clear boundary between games in the real world (such as board games, sport games and any similar social activities happening in a non-digital context) and games originated in the digital world. There is sometimes certain disagreement between the major gaming authorities and journalists if this should not be changed in order to clarify differences between games (and so it would be necessary to exactly state which game belongs to which system and to make clear use of the terms like computer games, videogames, Android games and such).

However, this is not the question for this thesis and so it should be understood since this point to the end of the thesis that any usage of the word *game*, *gaming* or collocation *video game* describes all the digital, electronic games regardless of on which system they might be played.

## **2.2 Definition of an RPG game, justification of this particular choice**

There are many genres of video games and a single game can be very often grouped as more than one of them. The genres are always linked to some extent and so it is very much possible to regard a game as an adventure and action or role-playing and strategic at the same time. This thesis is focused on a genre of RPG games (also note linguistic phenomena of RAS syndrome, which is unnecessary repetition of a word already used in acronym – another example is a PIN number). RPG stands for “role-playing game”, which might confusingly lead to think that the term itself is self-explanatory. To expand on this point, virtually any game is a role-playing game, simply because whatever is the action pursued, it is a result of taking some certain role in the game – but regardless of this fact, all the games can not be labelled RPG, although when the player shoots enemy soldiers as an American marine or guides vast armies of Rome against the barbarian nations, it is always a role taken and played.

Nevertheless, the RPG genre describes a wide variety of those games, where the player controls one or multiple characters (called *a party*) and follows a series of events and obstacles leading to complex and continuous narration of a story, where this character (or his/her party) has some role of various importance. The typical RPG game very often consists of highly variable activities, because the character (or more often called *a hero*) or the party is set into the fully functional virtual world with specific history, rules and very often absolutely unique origin (although there is great deal of games using already created fictional universes,

such as Tolkien's *Middle-Earth*). The player is taking over the control of the entire life of a hero or a party (sometimes – but certainly not always – without the necessity to eat, drink and rest, purely for the convenience and fluent game narration) and his/her role is to develop them in a way so that they can fulfil a final goal or story conclusion. This goal or main quest may vary, but very often the player faces a traditional fantasy or sci-fi story arc, such as defeating an evil villain, obtaining an artifact or sometimes unravelling a mystery. Heroes of such a game traditionally start out very weak (for example as a simple ordinary people without any particular skills, or only as a beginners in their future area of expertise – such as wizard apprentices or squires) and gain various abilities, powers and tools to become highly powerful, but it is mostly free to choose how exactly (freedom of choice is one of the most important aspects of RPG games and will be discussed further in relation to critical learning). Other elements of RPG games are random digressions from the main quest, in form of what are known as side-quests or challenges.

This might be illustrated on an example of the game *Baldur's Gate 2*, where the party of heroes might choose to help a lowborn woman finding her son lost in the city, although their prime goal is to defeat an evil wizard of immense power, threatening the main hero, his friends and ultimately the whole world. Such an act of aid is not necessary for the further progress in the main story and may be seen as an unwanted delay in much more important task (which is very often commented on by other characters in the player's party or people around – making any choice harder and thus giving a feeling of importance of leadership by the player, ultimately leading to a challenge and necessity of proving player's skills outside the game, which will be discussed later more deeply with the connection to contextual learning), but it serves other purposes (for example the party gains popularity among the townsfolk – thus allowing them to be better recognized in the shops or taverns and to gain an advantage in further quests).

However, it should be noted that there are numbers of exceptions, regarding this short definition as untrue or at least baffling. This is caused by original ideas implemented into such a games, defying comparison of any kind and never seen before or after the release of the game. There are few exceptional games, that have very atypical setting (such as totalitarian state in dystopian future and the role of a low bureaucratic clerk in the game *Papers, Please*) or approach (for example the idea of meta-game in *Knights of Pen and Paper +1 Edition*, where the player plays a game within a game by controlling a group of individuals playing a tabletop role-playing game) and they break the walls of explaining the RPG games simply by stating that it is, say, a game of a fantasy knight on his way to defeat a dragon. So, strictly speaking, the core rule to define a RPG game is the existence of an artificial game environment, allowing the player to take part in a story and affect it in certain ways, establish and personally form unique personality in the gaming world and perform various actions leading to different rewards, character developments and conclusions. Most important of all the aspects mentioned here is probably the ability to drive the narrative any way the player wants, to truly *control* what is going to be narrated – this is not only critical defining quality of RPG, it is also one of the most attractive attributes of them. “For Frank, the elderly gamer, it was the appealing ability to think and explore on meta levels that gaming allowed him. Others are compelled by the fact that they drive the narrative. It is telling how often the authors and the subjects here mentioned the appeal of the Dungeons and Dragons (D&D) role-playing game. Indeed, why just watch when you can do?” (Williams 255).

It should be mentioned that the RPG genre also includes not only some of the most popular (as mentioned before) games ever made, but also games with extremely high production values, such as vast storylines or very deeply written multi-dimensional characters, very often produced by professionals in their field, such as successful writers or scriptwriters (e.g., namely comic book writer and game designer Chris Avellone, his fame coming from the

titles he is responsible for, namely *Planescape: Torment*, *Fallout 2* and *Neverwinter Nights 2* – which are all games with vast fanbases, considered to be some of the best written RPGs of all time, all adapted to books and consisting of highly philosophical questions about humanity and life, difficult moral decisions and deep characters).

This genre is thus probably the most ideal to illustrate educational (or actually any) contribution of the video games – also simply because the player is supposed to take part in great many activities and not only to focus on one thing (such as shooting enemies with a gun might be in *shooters*, which is another video-game genre). It is a very common sign of a good RPG when the player spends a much greater amount of time talking with various characters, exploring the environment, reading through the local books or diaries, solving logical problems or social disputes and improving the hero, than just fighting the enemy in a frenetic action sequence. Actually, a non-written rule for a good RPG is to include the possibility to avoid combat entirely or to reduce it greatly with other approaches, such as diplomacy, stealth or knowledge of the environment. Nevertheless, the combat or various action sequences are present (although it is greatly varied to which extent and so there could be heavily combat-based RPGs or those with little or no action sequences whatsoever) and so almost everything that video games can offer is presented at the same time. This adds up to a complex and difficult, yet highly entertaining learning curve, with high impact on player's learning, as will be later discussed further and shown on practical examples.

## **2.3 Specifying the background, basic terms and extent of learning discussed within video games**

### **2.3.1 Content learning**

The learning of content is probably one of the most obvious forms of learning and it might account for one of the most globally accepted explanations of the very term *learning* that first comes to mind. Teaching and learning of some content, regardless of its specific focus (which can vary accordingly) is undoubtedly one of many areas of teaching at school – but it is definitely not the only one and there are other types of improvement that can be taught. One of few very important tasks of this thesis is to explain this and to prevent future prejudices met when discussing video games. To expand on this point and explain it better – there is a recurring theme to many of the negative approaches towards teaching and learning through video games: the gaming world is rather often (to some extent in virtually all cases) fictional, events and actions in-game are very far from reality and thus in unreal conditions nothing *real* can be taught. The practical part of this thesis shall analyze such prejudice and alternate viewpoint will be also put forward.

Nevertheless, teaching of content still is one of many things that the teacher should be concerned with and so it will be discussed further, since huge variety of games with *real* (meaning historical or similar to non-gaming world) knowledge can be found. How and to what extent can a video game fulfil such a task will be explained and also some aspects in which games may be superior or inferior to the classical textbook approach will be explored.

### 2.3.2 Complex learning

Complex learning is a psychological phenomenon describing an unlimited set of methods and techniques used in learning. As pointed out previously, learning is often understood only in its narrow sense as memorizing a certain amount of previously explained knowledge and reusing it, for example in a test, essay or during a dialogue – after some deeper analysis, there is always some more extensive explanation of this term, but in everyday life and especially considering the attitude of parents, this is what first comes to mind when using this term. Everyday uses of English *learning* (and its Czech translation, *učit se*) also support this particular meaning. By saying: “Did you learn that history book for your exam?” the inquirer really asks whether or not did the student learn it by heart, by *memorizing* data. This (rather one-sided) approach is surely a part of complete and complex education, but hardly satisfactory on its own.

Learning is a convoluted process involving development of abilities in various areas, such as problem solving, critical thinking and general understanding or very often popular “thinking outside the box” (basically an ability to come up with an original and simple solution, however unusual and untested, for an otherwise difficult problem). It is very popular amongst students to complain about rather unpopular school subjects, often by asking the teacher what is going to be the real use of such a skill or knowledge in their practical lives (a good example might be any abstract mathematical operation harder than simply counting numbers), when it is known that some of them (or even a majority) are never going to use any of it practically (to stay within the previous example, e.g., by becoming linguists or poets and thus never needing math in their jobs). One valid answer to such a complaint might be that it is simply as good a part of classical education as any and then trying to make them understand that even the most distant subjects can be related and interconnected to almost anything else – that may be more compelling to the students. Another way is to simply explain that by

learning anything – however abstract or seemingly disconnected from immediate usefulness – they are learning how to think properly – to address the previous example of math, that they are learning analytical thinking necessary for virtually any problem solving and that they also learn how to approach any other matter gradually, in order to deal with it successfully.

Video games, especially the RPG genre, may provide another appropriate environment for such learning, which is another assumption used in this thesis. James Paul Gee believes that video games are particularly good in this aspect and he defines complex learning in his own way. “The learner needs to learn not only how to understand and produce meanings in a particular semiotic domain that are recognizable to those affiliated with the domain, but, in addition, how to think about the domain at a “meta” level as a complex system of interrelated parts” (Gee 23). Further analysis and practical examples will be provided, in order to help understand gaming structures and designs as helpful and beneficial in complex learning.

### **2.3.3 Learning of critical thinking**

Critical thinking is a key to success in a great many activities, including everyday issues related to job and school, or even those of the highest academic difficulty. To use it properly, one must put one’s own methods (however effective or beneficial they have proved to be so far) to the test and allow one’s free mind to correct and change such a method appropriately when necessary. Video games are an ideal environment for exercising and improving such ability, simply because they are very accessible and encourage positive feelings by reducing the magnitude of any failure (by leaving several possible solutions, not just one – or even by a possibility to restart or load a game that did not go well). "In real life, when we face failure, when we confront obstacles, we often don't feel that way. We feel overcome, we feel overwhelmed, we feel anxious, maybe depressed, frustrated or cynical. We



never have these feelings when we are playing games. They just don't exist in games... What (is it) about games (that) makes it impossible to feel that we can't achieve everything, how can we take those feelings from games and apply them to real world work" (McGonigal). Critical thinking requires vast imagination and original attitude to problem solving, sometimes including even subjecting our own previous hypothesis or solution to heavy (but still objective) criticism. The outcome of such an approach is mostly rewarding and results in stable advancement and gradual success in any area. It should also help to teach how to teach properly or learn how to learn well and understand what was learned, and furthermore to reflect the opinions and outcomes in order to provide increasing quality of teaching, as well as learning. Critical learning is therefore beneficial not only to students, but also teachers – who must learn constantly how to improve themselves in teaching, presenting the subject or self.

Due to their very nature – to put any previously gained knowledge or skills to test very often and to require thinking on multiple levels – RPG games are highly serviceable in teaching what the principle of critical thinking is and how it can be used to provide beneficial results even in the context of everyday life. The hypothesis of this paper is that RPG games are not only good for illustrating what critical thinking stands for, but that they are equally fit to create suitable conditions for actually learning how to perform or at least improve in critical thinking, how to exercise such an ability. This is probably the most important point that is supposed to be made and will be discussed carefully in more subsequent topics. The author of the thesis firmly believes that this is the vital part in educational contribution of video games and that it is the most overlooked at the same time. Highly developed critical thinking is going to be a very valued and required skill in the near future – with the introduction of digital media and the Internet, whole structure of education and even way of thinking are slowly changing. For a majority of time, all the education and learning used to be mostly knowledge-based and to acquire some level of classical education was almost equal to gaining some

volume of information. In the digital era that the society entered not long ago, any single missing piece of information or knowledge may be very well compensated for by several clicks or touches of the screen. The ability to critically understand the sources and to be capable of further utilizing the information or solid knowledge found this way is currently already important, but it is going to be absolutely indispensable in the near future. Due to this fact, it is safe to say that critical thinking is probably the skill that should be – at least from now on – taught the most intensively.

#### **2.3.4 Contextualized and decontextualized meaning**

Another very important aspect of teaching is to teach within the context of the subject, while illustrating it on practical examples and providing sustainable conviction that it can be still interconnected with other contextualized meanings (such as explaining prosodic elements of the English language, while giving examples in everyday conversation and also pointing out why such a distinctive area of language exists by making short clarification in, e.g., psychological and historical features of the utterance). Contextualized meaning is easier to remember and to reuse properly in suitable situations, while still allowing a certain degree of abstraction. Decontextualized meaning, on the other hand, lacks connection with the subject itself and may – especially through the eyes of children – seem redundant or even pointless. A good teacher always helps students to understand the very context of anything that is supposed to be taught, showing links and juxtapositions not only to other school subjects, but also to everyday situations and practical uses. To illustrate on this point, it is obviously much better and beneficial to the lesson and the child to (for example) connect the blunt exchange of historical facts with a trip to the museum, an entertaining movie and a project where children could really feel the lifestyle of Ancient Greece. Understanding history is not the

only example, also grasping what it means to have democracy, feel socio-psychological pressure in a closed group or even experiencing important and ambiguous decisions when creating a successful class sports team leads ultimately to better problem solving skills in general.

Sadly, due to limitations in time or budget, sometimes on the grounds of having uninnovative and tedious teachers, school reality can not fully integrate such contextual lessons most of the time. “In school, words and meanings usually float free of material conditions and embodied actions. They take on only general, so-called decontextualized meanings” (Gee 86). What Gee is trying to point out is the fact that most of the learning at school is mindless and empty and thus can become meaningless, learnt only for the good grades and the sake of unhindered progress towards finishing the class. To learn something truly means to be able to use it in different, flexible environment. The best example might be a student of philosophy, learning important words and remembering explanations of a philosophical school by heart, without really understanding what the author was trying to achieve, prove or understand him/herself. Such a student might be able to pass some tests and to fulfil expectations that a regular teacher has, by correctly answering any of expectable questions (such as, who an existentialist philosopher was), yet not really understanding and learning anything strictly useful. That student would be unable to participate in a dialogue between people really understanding what it means to be an existentialist philosopher and what this doctrine involves in the real life.

Of course, in appropriate time, a student (especially older students of various universities) may learn how to see the bigger picture and how to improve their skills and comprehension further in areas set up by their school. Such thinking is very easy in theory, but may prove difficult in real situations and could come to a student rather later in his/her

life. “A key idea in problem solving is domain specificity versus domain independence. When solving a problem, a person draws upon specific knowledge and skills within the domain of the problem. However, a person also draws upon domain independent knowledge, skills, and personal characteristics. Examples of personal characteristics include self-reliance, selfconfidence, and perseverance” (Morsund 7). Video games may be a tool to improve such contextual thinking, providing viable conditions for a gamer to learn how to perceive any action as embodied in wider context without seeing it immediately. Connecting various skills from different domains is critical in order to truly succeed in video games, especially RPGs. They also due to their nature provide almost only contextualized meanings and highly connected environments – especially RPG games, where any object or action may serve purpose, although it is not obvious early on in vast universe of such a game.

## **2.4 Brief socio-psychological contemplation**

It is very appropriate for a teacher to try and understand the children with whom he or she is trying to achieve some sort of successful teaching. It is rather common for teachers and parents also to vilify the games, or at least disregard them as mindless and vain entertainment without further trying to examine them. This mindset is sadly rather usual and unprecedentedly accepted and pursued almost internationally. "We started by trying to look at the teacher's attitudes and find out how do they really feel about gaming, what do they say about it. And we discovered that they talk about the kids in their school, who talk about gaming, in pretty demeaning ways" (Carr-Chellman). It is perfectly understandable that various parents may be almost disgusted by the whole world of video games, simply because their child is sometimes spending high amount of time at the computer or TV screen, instead of, say, doing sports or engaging in a social activity (as the current Czech generation's parents mostly did, having little other options at their young age). There is little doubt that children of this generation spend a considerable amount of time playing video games, practical evidence may be found in the appendix of this thesis. In a questionnaire used (a copy and full results are enclosed), thirty children and thirty parents were asked how much they thought they (or their children) play video games – and the majority of answers was in the answer “five to ten hours per week” (fourteen cases according to children and seventeen according to their parents), with considerable numbers in “ten or more hours per week” (eight cases according to children and ten according to parents). There is also an interesting paradox of parents stating that children play more than they themselves think they do – although the final numbers differ only slightly, it is just a coincidence. Some of the questionnaires had immensely different results in the same family and question (at one particular case, there was a child stating that he plays only around three hours per week, whereas his parents were convinced that he spent more than ten hours per week playing) . Regardless real results that could be obtained during

some detailed observational experiment, this shows that either parents tend to disagree with playing video games and think that their children play too much, or that children enjoy games overall so much that they are unable to objectively measure and acknowledge time consumed by them. Parents and teachers largely do not understand the attractiveness of games to a child, because they are not attracted to them at all themselves.

This is a dangerous trend and should be paid attention to, because in video games, proper guidance is necessary almost more than anywhere else in activities of such a child. Video games vary in their difficulty, content and most importantly, their actual activity performed by the player. There are very intelligent and highly respected RPGs, focusing on rather grim subjects, such as death and personal crisis, including graphic violence or unsettling imagery (an example would be the already mentioned game, *Planescape: Torment*). Regardless of their qualities for a young adult or any other more mature player, these are not supposed to be played by children, who, on the other hand, have very huge portfolio of games more suitable for them. It is surprising, how many parents do not pay attention to what their children are playing, even though the same parents may be very considerate and careful when choosing right book or movie for their child. The questionnaire added to this thesis comes with alarming results, because from all the families inspected, nineteen (from the total number of 30) parents admitted that they have no idea what their child plays everyday. It is caused by lack of interest and knowledge in gaming area, that must be dealt with at least by their teachers (for example in IT classes), being interested in what the children play. "We need to meet them where they are; we need to put ourselves into boy culture" (Carr-Chellman). It is also very good idea to consult any internet authority and to check the game currently played, for example by searching it in various gaming databases (such as *MobyGames*) or even finding it on *Wikipedia*. All the games are very clearly described and the teacher or parents may make a picture of such a description, in order to further prepare themselves, however

briefly or fractionally, what to expect from certain games (without spending their time playing them) and what to focus on when using games as means of learning and teaching.

To understand why video games are so popular and appealing for majority of nowadays children is crucial and there are very long and quality books describing this phenomenon in detail. To clarify at least shortly, the qualities of video games are (not only) following: the child has high level of agency and can affect the world in the game greatly (providing him sense of self-importance and feeling of success), the games have extremely high level of immerse and flow (which are special terms of describing the child's absorption by the game), video games are very often based on some attractive environments and using already famous and popular fictional universe (e.g. games from the *Star Wars*, *Middle-Earth* and *Harry Potter* universes) or creating it on its own (a good example would be the immensely popular RPG series *Pokémon*). These reasons add up to unique experience for the child already, but there are some others, not so obvious. One of them would be the right level of difficulty and choice – there is no right way to play a game, so to speak, because if some progress is not required, one activity or gaming stage can be repeated many times, depending only on how much fun the player experiences. In almost any video game, there is some sort of difficulty option, for example affecting how difficult the combat situations are and how much skilled the player must be in order to succeed – and it is a unwritten rule that the options are at least three, giving a choice between easy, normal (or average) and hard difficulty. The player can therefore lower the difficulty at any time, to prevent frustration, or in some other case, choose the more challenging option right after he or she feels confident enough to do so. This, together with the fact that there is an extremely high number of games dedicated to players of every age, results in very available entertainment, accessible by children of all ages. Therefore, there is no limitation to what skills, interests, knowledge or even reflexes should a gamer have. Video games can fulfil children's requirements in varied occasions, regardless if

mindless fun is required or a challenging and self-improving journey within an extensive storyline is.

This must be understood and acknowledged, however negative the feelings towards video games are in case of many parents or teachers. Video games are played in excessive manner, their popularity among children is absolutely phenomenal (a research of Amanda Lenhart from the site *PewResearch Internet Project* from 2008 states that from 1102 questioned parent-teen pairs, vast majority of them – 97% – play video games of some sort) and this trend is probably not going to change very much in coming years. And it must be understood that this is not only an occasional interest – the overall amount of time spent playing games in total is also massive. "The average young person today in a country with strong gamer culture, would have spent ten thousand hours playing online games by the age of 21... for children in the United States, ten thousand and eighty hours is the exact amount of time you will spend in school from fifth grade to high school graduation, if you have perfect attendance" (McGonigal). For a teacher, it is critical to understand and to examine this area thoroughly. The opportunity to do exactly what the child wants precisely at a pace that is specifically chosen for him or her, is very attractive and can not be easily replaced by other media, electronic or not.



## 2.5 Comment on edutainment

The question of the educational contribution of video games might seem redundant due to the existence of a specific gaming genre, the edugames. The word itself combines education and games and even the sole purpose of these games is to educate. There is a reason why such games are not the main focus of the thesis, which is the fact that the edugames are rarely played by children themselves, at least when it comes to child's free and willing choice. They might be for example incorporated into a lesson of IT studies at school or played together with someone working as a tutor or generally an overseer, but they are globally unpopular and – surprisingly – sometimes even despised by those students who normally play videogames. To understand such an attitude, it is necessary to know the background of the world of games, including the companies developing them.

There was never a pure edugame created by great professionals in the gaming area, no record of any big and influential gaming studio (such as *Electronic Arts*, *Blizzard* or *Ubisoft*, which are developers and also distributors of some of the highest grossing games in history) ever making fully educational game. Even though some political or economic authorities (such as the European Union) have tried to encourage developers by preparing several grants for the purpose of creating a game serving some particular purpose, the results of these efforts failed and the games were overlooked by the general public as well as gaming journalists and then quickly forgotten. Only very recently, this trend started to change (at least to some extent) and *Nintendo* (which was always a company oriented highly on family or even children's games) or *Microsoft* are developing or supporting truly professionally developed edugames. There was simply no demand on the market, regular gamers have no interest in playing such games when there are so many other, more attractive games to choose from and teachers or parents (or even institutions, like universities) are still using computers during lectures only very occasionally, mostly trying to do the exact opposite and (in the case of

many parents) rather trying to prevent more time spent with electronic than to encourage it. Thus the edugames are often developed by people with little or no experience in game design, working only with a small budget and very limited area of expertise. Therefore, although there is good intention behind such development, edugames not only have poor graphics and low production values, they are mostly not very entertaining and very often lack the gaming experience itself and a child sees through such a game, which this way loses its only redeeming quality (being a game, not another task at school) and approaches them as a learning tool, not a game. Ali Car-Chellman, an instructional designer studying efficient ways how to teach kids in a modern way, comments on this: "Most of the educational games that are out there today are really flash cards... They don't have the depth, the rich narrative that really engaging video games have... so we need to design better games."

As a result of this, the edugames are not a very efficient teaching technique simply because they are not played (and when forced on a child, they are not enjoyed), or played only with little or no enjoyment. This thesis focuses on the RPG genre of video games also because of the striking difference in this exact area – RPG games are very often some of the best selling, highest rated (by gaming magazines, internet authorities or gamers themselves) and also most memorable games of all time throughout the world. Namely, in a worldwide context there are, for example, games such as *World of Warcraft* or *Guild Wars*, which are some of the most popular, best rated and also best-selling games of all time. According to the site *vgchartz.com* (which monitors global sales of video games), for example *World of Warcraft* sold 11.47 million copies in North America and 8.71 million in Europe. This is even more apparent in the Asian countries, where probably the most influential gaming series of all time (with extreme impact in pop-culture) would be *Final Fantasy* (44.53 million copies of all RPGs from this saga sold in total) or even *Pokémon* games (65.58 million copies of all *Pokémon* RPGs – there are more than thirty separate versions and episodes – sold in Japan).

On the other hand, there are rare exceptions that deserve to be noted in this work, because they might represent a growing trend to greater attention being paid towards the educational contribution of games in general. The strongest argument for the growing popularity of edugames can be found primarily on the mobile gaming platforms, such as iOS (the system used by Apple devices) or Android, although available also for Windows – the game *DragonBox*, which teaches math and algebra, was voted to be the best serious game at the IMGA (International Mobile Gaming Awards) in year 2013 and belongs to some of the best selling mobile games, most notably in Norway (creators of this game from the site *wewanttoknow.com* claim that in spring of 2012, their game was the top grossing app in Norway in all categories from the very first day it was released). However, this is not an RPG game and to this day, rather an anomaly in its popularity. As mentioned before, this is probably going to change in the near future, but it is not very probable that such games are going to overtake the market completely and change the portfolio of video games played globally. Due to this fact, edugames cannot be taken for granted as perfect and popular teaching tools, at least not just yet.

## **3 PRACTICAL PART**

### **3.1 Games and learning of content**

Learning of pure content, solid and real-life related knowledge is not the highlight of RPG games. There are, undoubtedly, very good examples of video games able to teach any player very valuable and truthful information about most issues, in particular history and geography. However, such games are rather often of a different genre, mainly strategic or adventure games (the first genre focuses on tactical skills of leading an army or building a city or whole civilization from scratch and leading it towards a successful future, the second one are strongly dialogue-driven games with no action whatsoever, where the player occupies himself or herself only with riddles, dialogues and experiencing the storyline) and so they would not fit very well in this thesis. Regardless of this fact, there are still some RPG games that would serve very well in this area too, with some special and unique features that might eventually lead to deeper experience. Even those without any real content whatsoever (for example based purely on fictional rules and worlds) can ultimately lead to learning of other content.

#### **3.1.1 Personal connection and lively illustration**

First, it is necessary to point out the ability of video game to make some experience personal and available, to be able to go through some of the events in person. A few games will serve the purpose to illustrate what is important here. The first one is *The Oregon Trail*, a classic game (first released for Apple home computers in 1981, but actively played on public computers – for example at universities – more than five years earlier, released in different editions and remakes a number of times even to this day) about travelling across North

America as traditional settlers and pilgrims via covered coach. The player in this game takes over the role of an expedition leader, guiding the group through harsh wilderness and sometimes hostile environment, with the ultimate goal to arrive to Oregon with at least some settlers alive. The game, despite its age, is detailed in description of the dangers of traveling into the unknown and uncivilized environment, and was often described as unforgiving or downright hard. It recreates the hardships the original travellers had to overcome in painstaking detail – the party must not only take care of food and hunting the game or defending against hostile tribes in the wild, there are much more prosaic and insidious dangers as diseases (the game became quite famous for the possibility of dying because of dysentery) and permanent injuries. *The Oregon Trail* became a legend and is played even nowadays because its original atmosphere and accurate depiction of hardships the American settlers had to struggle with. Another good example of game precisely depicting the past is actually still in development as of 2014, although it is in the phase where there is enough information about the game to discuss it already – *Kingdom Come: Deliverance*. Many RPG games are set in a quasi-medieval period with a larger or smaller portion of fantasy features, such as monsters, magic or other elements – *Kingdom Come* is going slightly different way and its goal is to mediate accurate historical experience of medieval middle Europe, with heavy concentration on the life of a commoner in the Hussite period of the Bohemian nation. It pays attention to a great deal of the features of this era, especially economic and social status of lowborn person, religious and political background and original themed weapons actually used in that age.

These games may not serve as a surrogate for a whole lesson in history, but they are ideal as an illustration of this period and may obviously serve as a great tool for a teacher who may somehow incorporate a video game into his or her lesson. Due to the strong popularity and fun factor of video games, children would surely react positively and would easily remember not only knowledge gained within the game, but they would also have the original

context and can therefore connect any linking study much better to it, thanks to at least partially being personally connected to the period or any topic in general. “Of course, humans don’t just store these experiences in their minds “as is.” Rather, they edit them according to their interests, values, goals, and sociocultural memberships. This editing process helps them structure the way in which they pay attention to their experiences, foregrounding some things in them and backgrounding others. Furthermore, it is the connections or associations that people make among their experiences that are crucial to learning, thinking, and problem solving” (Gee 73). Video games are also not limited only to the historical content; they can offer variability in topics that may serve well to almost any case. There are games set in the worlds of great literature classics, such as *Spirit of Excalibur* (an RPG game about the Arthurian mythos and literary tradition, following it very faithfully and in extreme detail, not simplifying it and including a great deal of historic detail), *Rise of the Argonauts* (where the player takes over the role of Iason on his adventures, while the game includes the story covering great amount of Ancient Greek myths) or even the aforementioned *Papers, Please* (an RPG depicting life of a clerk in fictional dystopian society, paying attention to both realistic capturing of how such a system works both economically and on a psychosocial level – making it very reflective and confronting the player with difficult decisions and questions that a teacher may use greatly in both social studies and literature lessons. Some topics are covered better and some other themes are rather lacking in video games, but searching an internet database would surely yield results in any particular area. Even not very probable areas, such as math, are covered to some extent. To expect that the games shall teach the children some content more thoroughly than a well prepared engaging lesson is surely not possible – but quite a large volume of inspiration may be drawn from them in order to secure an engaging and beneficial lesson.

### 3.1.2 Practical example of a successful usage of RPG principles in class

At this point, it is very relevant to mention one particular example of a teacher, who utilized his experience with RPGs in his class (in 2012) probably the most creative way possible (at least to this day). The teacher's name is Taylor Nix, he is a world history teacher and his class was taking place in Poplar, Montana. His classes were full of apathy and lack of interest, but by personally connecting himself to the class, he came to a conclusion that most of the students are ardent gamers. His reaction to this discovery was to further adapt and use almost all the systems used in RPGs possible. Any project or homework was transformed to a quest, which made them more popular and important in the eyes of the students.

“Nix posted history assignments on a bulletin board on the back of his classroom every Tuesday which served as the game's “quests.” Fans of RPG-giant game developer Blizzard may appreciate the exclamation points appearing over the board's assignments. In RPG games, exclamation points above characters heads typically indicate a job being offered for money or other reward. The students would complete the assignments and receive loot in addition to their letter grades. Each student had a folder for their inventory with spots for a helmet, chest plate, bracers, boots, pants and weapon, just like the inventory screen in a game like *Diablo* or *Dragon Age*. So if a student was lacking a helmet, they went to the quest board and found a quest which listed a shiny new helmet as a reward and completed the assignment. Quests also gave students' RPG avatars new skills, abilities and character stats” (Hannify).

This example shows that the teacher transformed his assignments completely and went all the way in making his teaching as close to RPGs as possible. If he had acted any differently, for example, if he was not that consistent in his changes, the students would hardly be so engaged and entertained. Mr. Nix included all the important details (however minor they may appear – such as using very well-known question marks in marking his

*quests*), he did not just start calling his assignments quests without any other noticeable change. The style of the quests as known from RPG video games was preserved, as well as the necessary (as was established earlier in this essay) rewarding system. He secured personal connection to the topic and made every student feel involved in his lessons by a character-creation process at the beginning of the year. “The first stage was creating their characters. They picked a name, a class (a specific role a character fills), and even wrote short background stories that explained who they are and where they came from” (Nix). The teacher then established himself as a leader of a group of heroes, soldiers on their quest for knowledge. Every single student started on the same level and was given an equal freedom of choice, allowing them all the same level of partial adaptation of the topic. All the rules used by Taylor Nix in his class are rather lengthy, so they are not going to be explained here in their entirety (but they are available on the website [schoolimprovementnetwork.blogspot.com](http://schoolimprovementnetwork.blogspot.com)), but in the end, there were no students excluded from this form of teaching and the whole class was working as a team (or as a team of smaller teams), enjoying the whole process immensely, while still learning all required data, the knowledge from the curriculum (the final tests happened as “boss-battles” and subsequent field protocol). It is also important to say that it was an uneasy task for the teacher and to prepare each lesson in this fashion proved to be rather time-consuming decision. “The key point that I want to drive home to you fellow educators is to embrace your student’s interests... they show up to my class ready to succeed and more importantly ready to play. I won’t lie and tell you that it is easy to plan because it’s not” (Nix).

This single teacher – it is entirely possible that there are more examples of such activities – might be the harbinger of modern approach in education. He was not afraid to spend some additional time (than was required by the school rules) preparing his activities and he was rewarded accordingly (at least where the students are concerned). Taylor Nix is a



young teacher and so he has already vast experience in RPGs and video games in general from his personal life, thus he was able to come up with very precise imitation entirely by himself. Nevertheless, he may serve as a great example for other teachers, who – even though may not be interested in video games themselves – could explore their student’s interests and learn on their own what it means to be a child of this generation, in one particular class.

### **3.1.3 RPG systems as indirect – yet very efficient – teaching tools**

What is a more real function of video games in teaching some valuable content might be to provide a starting point or some sort of background feeling, making the player interested in the topic and also to letting him or her see its connection with reality. “Games can function as doorways into specific content, offer an introduction to a specific skill set (learning probability by playing *Dungeons & Dragons*, for example), or operate as a node within a larger learning system, as is the case in science museums or libraries” (Salen 13). RPG games are very often based on rules of the tabletop roleplaying system, *Dungeons & Dragons* (herinafter only referred to as *D&D*) and the gaming mechanisms and laws are modified and used within the game, mostly with a clear introduction of what which number or statistic represents. To help the reader of this thesis understand that the video games can be demanding in teaching any subject (even inadvertently), the example mentioned by Katie Salen above will be explained in greater detail.

To a frequent player of RPG games, it is not uncommon to face, for example, the following formula “ $2d4+1$ , THAC0 +2” in a great variety of games, for example, the critically acclaimed *Baldur’s Gate 2*. This formula in this game is used to explain the extent of damage dealt by a certain weapon, monster or spell and it determines how probable it is that the damage will be dealt. “ $2d4+2$ ” represents two rolls of a four-sided dice, with added value of

two to the overall result. Abbreviation “THAC0 +2” stands for added value of two to the overall “THAC0” value of the player, which is shortened “To Hit Armor Class 0 (zero)” and is calculated from the player’s hero skills and experience. The player then can compute that the damage dealt for example by his newly acquired sword would be somewhere between four (two times one, as the lowest value possible on the four-sided dice, with added value of two) and ten and that his chance to truly land the strike would be increased by two. Such an entry might seem confusing at first, but any successful RPG player *must* master it quickly and surprisingly, most of them do so almost immediately.

At first sight, it might seem that the player can just look at the numbers and equip the weapon with the highest numbers – but due to interesting mechanism behind the game rules, that would not be enough. There is a way to establish a difficulty of making not only a succesful hit with a weapon, but also how probable it is to damage enemies lightly or heavily with a blow. These mechanisms are represented by different virtual dice for various classes of weapons – to illustrate this point, game rules take into consideration if the player is striking with a war hammer, longsword or a spell (leaving the player with absolutely reversed values, e.g. 5d2). A hammer may have the previously seen entry, 2d4+2, whereas a sword for example 1d12+0. Through detailed inspection, it is possible to understand that these rules are logically anchored in reality of fighting – a war hammer gives slightly narrower values of damage (3 to 9) than a longsword (1 to 12), with higher low value and lower top value signifying that (surely at least against an armoured opponent) it is easier to land a strike that would deal some noticeable harm, but harder or downright impossible to make a hit that would deliver great injury or death on a first strike (again – it is necessary to take this in the context of mostly fantasy worlds and armored or magically enhanced opponents). The longsword, on the other hand, may be more demanding to master properly, leaving many possibilites to only scratch or cut lightly the enemy in motion (and so damaging him/her only

lightly), but also has potential of striking the foe devastatingly (imagine a stab to foe's neck or cutting off a limb).

This example then proves that the player must count constantly and evaluate the situation in any fight (combat is only used here because is easy to explain to a non-gamer, this technique is used to determine other skills too, such as persuasion or success in tinkering and alchemy). It introduces him/her to the subject of probability, leaving him/her with a choice if it is better to equip reliable weapons like aforementioned hammers, or experiment with rapiers. It also teaches the sequence of mathematical operations (adding the number behind the plus mark must be done after multiplying and finding out the range of possible dice combinations) and constantly forces the gamer to count (and very frequent simple math operations are extremely beneficial for the brain, as was determined many times, for example in the case of *Sudoku*). Any learning that the player must undergo is also highly anchored in reality, contextualized and made logical and personal – exploring possibilities with math operations is served with absolute connection to reality (or at least, the gaming reality), making it overall easier to understand. This slowly brings us to another area in which video games may contribute to learning and teaching, the skill of problem solving and critical thinking. Before discussing that phenomenon, there is another aspect of RPG video games that has to be discussed, variety of gaming worlds and their *lore*.

### 3.1.4 RPG lore as a paradigm of quality learning

*Lore* is a general term used in video games to describe all the background information and knowledge about the gaming world, that is (mostly) not critical or absolutely necessary to play the game, but it serves other purpose – to enhance the atmosphere and to help with immersion. Stripping almost any RPG to its skeleton, removing all the additional and not downright necessary parts, would result in a simple story followed rather straightforwardly, as would be the case in an average book of fantasy literature. All additional elements might be redundant, but also may reward the player with some sort of advantage or leave him or her with deeper experience. To expand on this point, *The Elder Scrolls* saga will be given as an example.

*The Elder Scrolls* is a highly acclaimed RPG series consisting of several very complex and long RPG games (the last one to date, released in 2011 and named *The Elder Scrolls V: Skyrim*, was declared to be the best RPG of the year or even whole decade by a number of authorities and journalists, for example it also received a score of 9,5/10 and 9/10 on sites *ign.com* and *gamespot.com* – both very important and respectable sites in gaming world). These games are set in the same universe, most of the time they depict events on one continent called *Tamriel*, with the games partially happening on the same places in different ages or sometimes as a tales of separate provinces (but still acknowledging the rest of *Tamriel*). Every time, regardless which game is played, a separate storyline is presented – one that can be understood and narrated perfectly without really knowing anything about the surrounding world or playing any previous game before. During the game, all the characters met on the journey have different personalities and highly variable race, religion or attitude towards the rest of the world. It is for example not uncommon to meet a forest ranger who complains about the current king and comments on his dynasty with despise. Such a character

might be important for the storyline, as well as not to serve any purpose other than to create the atmosphere. In such a moment, the player might have his or her own opinion about the royal family, which can be rather positive – leading to inner conflict and suspicion. At that moment, the players of this game may forget about it and focus on playing further the main quest, or by careful observation, research outside the main storyline and asking the right questions might understand his attitude and behaviour fully. By reading various books and scrolls in the game (which is an action that is almost never essential to complete the main quest), as well as paying attention to narrations of local people when traveling around the province, the player can ultimately come to an conclusion, that there were huge historical events (wars and revolutions) not directly mentioned in the main storyline. Studying further the race and origin of aforementioned ranger, it is possible to come to a conclusion that he comes from a family of fugitives that left one region after being defeated (by an ancestor of the current king) in civil unrest after revolting against the social situation of their people. Now, the player has acquired some amount of the gaming *lore* – he or she understands the world of the game better and can form his or her critical opinion more precisely.

Contribution of such a knowledge now settled in the player's memory may seem downright useless in real world – and it probably is. Even Jerry Holkins, one of two authors of highly influential comic web series *Penny Arcade* (glossing the world of gaming), wrote a sarcastic remark on this topic in his book *Penny Arcade 1 – Attack of the Bacon Robots!* “It's fun to imagine that I've accrued some genuine knowledge in my quest to achieve more potent “skillz” in the digital realm” (Holkins, Krahulik 80). This comment acknowledges some sort of uselessness of most of the purely gaming (virtual world based) lore and knowledge acquired during his playing (as well as knowing perfectly mythology of the *Middle-Earth* or *Star Wars* universe brings no benefits outside discussion and studies written by and for other fans). There may be ongoing discussion if or how this exact *lore* can be useful and valuable

anyway, but that is not the point here – in context of the educational contribution of video games, it is much more important to understand *how* was this knowledge gained.

The description of the previously mentioned random situation in *Skyrim* was to serve as an illustration of how can games be beneficial in the very act of learning how to learn or teaching how to teach. First, pursuing additional knowledge must be (at least partially) personal and willing – the player (or student) must have real interest and be curious in the situation itself, then any research will be done with higher success. Then the player must have had done general situational overview, evaluate his/her current opinion and submit it to criticism (e.g., allow himself or herself to think that the situation in the kingdom is not black and white and that his current sympathy towards the royalty may be biased). Discovering and reading related history or biographical books is the next step, made easy by logical connections in game (town halls or monastery all have extensive libraries, as well as any rich citizen has a bookcase with basic history books) and by compressing any book to few pages (even the thickest books in the kingdom are – after being opened – contracted to maximum of around five pages, caused by originally by technical limitations – but ultimately being a good decision for the player too, because any book is then only a representation of the most important parts of itself, not discouraging the player from reading it and still giving valuable *lore* at the same time).

Eventually the player will face another lack of knowledge in his/her research, in this case it might be not understanding some specific names of places, nations or races – leaving him/her with an option to leave it be for a moment and then to understand it better after some time spent in game (after meeting those races face to face or traveling to such places personally). The player, while following what was originally only a hateful remark of a commoner, learns a good deal of information the most natural way possible. The player

pursued his/her interest continuously and steadily, connected various actions together – such as persuading the townsfolk to speak about the ranger, reading books and listening to various more or less biased stories of other people – and ultimately created the complete picture for himself/herself, that is much more precise than the one he had at the beginning of the game (when the player does not know anything of it and is only introduced to a seemingly benevolent king). This may eventually be used in game, to change player's allegiance or to reveal manipulation and machination within the royal family, rewarding the player with much better background information in order to make decision that would fit his gaming personality the best. Even without any particular use, this information contributes to better feeling and atmosphere of the game, leaving the player more satisfied with his time spent in it. The charm that games have can be analysed and used further as a template for a successful lesson – using the natural curiosity and resources of the child with a suitable reward, making any teaching sequential, interconnected and probably most importantly, somehow personal.

## **3.2 Games and the question of critical learning**

### **3.2.1 Challenge and reward in RPGs**

Facing a constant challenge and decision in the game is one of the less discussed (but yet more important) aspects of entertaining yet successful gaming. One of the charms of RPGs is definitely the ability to simulate and mediate a well balanced living virtual world, where it is necessary to think through all the decisions cautiously. Inside such a world, the player must find and establish his place in order to truly integrate in it and achieve any goal (mostly discovering the storyline), leaving him with quite wide freedom of choice. Looking at this possibility in greater detail may reveal surprisingly good results in creating successful learning environment – and that is really the point here. The first and most important aspect of RPG games is freedom of actions. RPG games allow numerous possibilities in various situations, while adapting themselves to the player. There is no previously determined or firmly designated interaction; every single gamer is an original and no game is the same. Due to specific playing style, the RPGs are ideal in proving this point – they have (in most cases) one critical quality, the open world. “In these games, learning resembles a process of coming to understand a system, experimenting with multiple ways of being within that system, and then using that system for creative expression, usually enacted within communities of other players. The game structure is less about reproducing a particular way of thinking and more about creating spaces for knowledge creation and discovery” (Salen 171). Good learning environment in video games comes from huge amount of specific aspects, some of them are apparent from the outside immediately (games are attractive, the child is automatically interested in them – a critical point for successful learning), whereas some others could be found after deeper analysis of specific games.



Gaming worlds, systems and ecologies are all highly rewarding. Good motivation is always beneficial and some mechanics in RPGs are utilizing it for the benefit of good learning. Mainly, the very story of the game makes the player feel an importance of his quest and deeds, however small they may seem. In a good RPG, the story always ties up with the fate of the hero or party controlled by the player – and regardless starting conditions (there are some cases, when the player is already a highly respected knight, while in a different game the player may begin as a commoner or even a homeless child), at the end the protagonist is always highly influential. "And also there is this epic story, this inspiring story why we are there and what we are doing. And then we get all this positive feedback... we don't get that kind of constant feedback in real life" (McGonigal). This is then connected to the often used plot element of revenge or mystery surrounding the hero – quite a large amount of games begin with the main character being taken from his/her original family while there is an attack on his/her home village, putting the hero on the same level as the player, leaving them both alone and inexperienced in new world, while giving plausible reason why he/she should move on and pursue the goal. This is the type of motivation related to story; setting up the tone and making the player believe that his actions matter. However, there is another type of motivation, and that is rewarding the player immediately, so that the results of his actions are always imminent. In RPGs, the system of *experience points* (often expressed by the abbreviation *XP*) is introduced. So, any progress is immediately rewarded by *XP* (and mostly also a new item or some amount of local currency). The game *Arcanum: Of Steamworks and Magick Obscura* (further referred to only as *Arcanum*) would now serve as an example how such a system works and how it may be beneficial to creating good learning environment. This explanation will be also further used in discussing different topic, so it is important that the reader of this thesis can understand it.

*Arcanum* is a game set to classic fantasy universe of quasi-medieval magic land, where industrial revolution occurred. Old inhuman races (such as elves, orcs or gnomes, among others) of classic fantasy origin are struggling to keep up with humans, who regardless their disadvantages (no enhanced strength or longevity, as is the case with ogres or elves) prevail in technical advancement, especially when producing new tools, weapons and machines and taking over most of the power in the kingdom or land. This world has highly developed political, historical and racial background, making it very variable in each regions – some of them despise industry (elves living in the nature and wizards separated from other countries by vast desert), while some other races started to take advantage of it (gnomes for example proved to be excellent businessmen and dwarves (sic) exceptional machinists).

Every game starts with in-depth creation of new character, the main protagonist. Appearance, race and gender are selected and then the character sheet is displayed – there are eight attributes (greatly affected by previous choices – making the orc male with criminal past absolutely different from Elven female originated in royal magic family), namely strength, constitution, dexterity, beauty, intelligence, willpower, perception and charisma. The player is then given five additional “skill points” (default values vary greatly in connection with previous choices) to spend, giving him an opportunity to balance weaknesses of his character or to intensify his powers in those areas. These points can also be spent in three areas of expertise – general skills (such as archery, sneaking, persuasion or melee combat), technical skills (divided into areas of expertise, such as chemistry, smithery or guns) and magic (again with various schools of magic, such as white magic, dark magic or divination). At this point, the player is facing very strong urge to choose the best skills that would be the most beneficial on his journey and that would be fitting for the newly created character. All the skills are almost equally important (e.g. rising constitution gives additional health, making the character more resilient, putting the point into gun smithy enables crafting a gun and spending the same

point in nature magic gives the player new spell of conjuring a friendly beast to protect him) and are not exhausted after spending only one point in them, making it possible to rise any skill or attribute further and further with additional benefits (for example previously mentioned constitution will at high level eventually enable the player to regenerate automatically, instead of only raising his/her health points; more points in magic in turn unlock new powerful spells etc.).

When the game starts, the player is introduced to a convoluted story and begins his journey. The hero starts at level one, with an empty XP bar. Almost any action of significance is then rewarded with some amount of XP – killing wild animal results in gaining XP, as well as completing a side quest for a merchant, having a successful conversation with plot-related character or gaining new allies (party) by using diplomacy, persuasion or barter. After reaching some number of experience points, the player gains a new level and is given one previously mentioned skill point (two in case of every fifth level). Logically, the player is then motivated to gain experience points in order to gain a new level and skills, resulting in stronger and more seasoned hero with new abilities – thus enabling the player to develop a character that he or she wanted since the beginning of the game. The system of experience points is immensely popular and its charm is very hard to explain to a non-gamer. Satisfaction gained from leveling up is one of the most important reasons why RPGs are so popular. This satisfaction is a result of immediate feeling of progress, or at least instant recognition of any action (however unimportant or minor it may seem from the outside). Instantaneous display of rising XP contributes to realize that no effort is vain and every action leads to further development of abilities in the bigger picture. Several software developers have already noticed addictiveness and popularity of this concept and used it in different activities. There are fitness smartphone applications (e.g. *Fitocracy*), enabling their user to transform their workout into such an RPG leveling system, rewarding every workout accordingly and any

additional exercise even more – providing simple and effective motivation/competitive system. Another example is the application *QuizUp*, a very popular trivia game for Android and iOS, where the topic is chosen (including highly educative ones) and then the same rules are applied – in this case, even losing is rewarded with some amount of XP, and so the player may progress in gaining levels (which are not just autotelic, but the user is accordingly given titles and achievements that can be used further). All these applications are highly popular and both were to this day downloaded and actively played by more than several hundred of thousands of users – whereas for example some other trivia quiz games are not even remotely this popular.

This is the key point to understand one of unique aspects of RPGs and why they make good learning environments. Some sort of reward or at least progress is constantly making the player captivated by the game, while not giving away anything without at least some effort and still keeping some options seemingly almost reachable, but not accomplished (in *Arcanum*, even the late game characters who are very strong still have some potential to grow). "There is always something specific and important to be done" (McGonigal). This is critical in understanding how may motivating of a student work. An attempt to show the child on example of well-known video games how could his or her work may lead to better understanding of overall learning and may be very beneficial. Also, some sort of applying these rules to regular teaching may prove helpful, especially in the case of private lessons and one-on-one teaching. Seeing that any action brings results and that even failure can be beneficial is critical.

### 3.2.2 Uniqueness of every situation and multiple solutions in RPGs

Some actions or solutions to situations in game are also rewarded better than others, leaving the player with constant struggle in order to achieve the best possible result. This leads to another important aspect of why RPG video games represent good learning environment – actions of the player must be done with critical thinking (at least in order to successfully progress further). They can be very hard and yet still not discouraging, because failing in one case means immediate gain in some other, being challenged is perceived as very good – because the child is not forced to try only one way to the solution endlessly, but some different options are always given. “In video games, losing is not losing, and the point is not winning easily or judging yourself a failure. In playing video games, hard is not bad and easy is not good. The six-year-old mentioned earlier was once asked whether easy or hard was better in a video game. Without a pause, he said hard is always good, easy is not. Would that children said such things about learning science in school” (Gee 165). Open world, as previously introduced, is there to provide multiple solutions to seemingly a one-way issue. The player must learn how to utilize this open world in order to achieve his goals the most fluent way he or she wishes – and he or she can *always* do it (even after struggle). That is very engaging and entertaining sensation.

In *Arcanum*, there are multiple solutions to most of the problems, predominantly at least two diametrically different ones. One side quest of this game may serve as a good example to this issue. A citizen of the largest city (*Tarant*) had inherited a spacious but rather dusty and battered warehouse – he has plans to rebuild it and start a factory in it, but after entering it for a first time, he found out that it had become a home to big groups of rodents, namely huge and dangerous species of scavenging rats. Being a simple businessman, he has no experience in combat, so he flees immediately. The player meets him early in the game, in

front of this warehouse, standing there in helplessness – the owner is about to start some very costly business and so he does not want to spend any additional money in order to get rid of these rodents professionally, but he can not really begin with reconstruction with them inside. The player may offer his help for free and is given a key to the warehouse. At this moment, the player's possibilities are many.

The player might have put his skill points into fighting, either in melee or magic combat, so he may start a battle with the beasts – this is the most straightforward option, also putting the hero at risk. However, after a brief exploration of the environment, other possibilities appear. There is a choking point between a nest of the monsters and the door outside, where the player (if he is a skilled thief) may sneak and place some mechanical traps, then lure the rats out and they will perish. The player may be skilled in gun smithing, so he may construct a rifle (buying one is an option too, but advanced weapons are rather costly and it is unlikely that the player will have enough money to do so, at least at this point in game) and start shooting the enemies through a window from the outside, protected from them. It is possible that the character the player is controlling has been created as a very persuasive and charismatic person, and so he/she can search the city and find some people that would help him/her in his quest, joining his party and thus traveling with him – sending those party members after the enemies is another possibility. In the similar manner, a mighty conjurer may summon a monster of his own to fight for him. Even as an herbalist and healer, unable to fight properly or convince other people to join his quest, there are more creative solutions – mixing a poison with large amount of food in his inventory and leaving it to the rats will eventually solve the problem too.

All these approaches require previously gained skills or at least some preparation or character profiling, but there are some others that a perceptive player might find. The warehouse is at the edge of an industrial district, not very far from more luxurious parts of the

town. These are guarded by the city soldiers, defending anyone who has been attacked on the streets in any case – regardless the reason being a pub fight or some barbarian raid – as well as fighting anyone who disturbs the peace. The rats are persistent and can be deadly in bigger groups, but they are not very fast – and so if the player manages to use himself as living bait and lure them out from the warehouse, leading them at least one street further to that neighbourhood, the guards will pursue the monsters and attack them, because they pose considerable threat to all citizens.

### **3.2.3 Critical thinking performed in action**

This list of possible solutions is not final and there are surely even more ways to solve the problem. Regardless what the player does, the game will always reward him and mark the quest as a successfully completed. This situation is unique – but not rare in any manner and there are dozens of such quests (most of them being very different from this one) that could be completed in various ways. Taking a closer look at this situation, more examples of well applied learning environment emerge. In order to fruitfully finish this quest, the player must have explored the environment and gaming mechanics, find out what are his options in gaming engine and utilize them. He or she had to take into consideration skills of his character (and also his equipment) and critically understand his possibilities and pick the most fitting solution. This is exactly the situation that subconsciously teaches critical thinking – the player must understand hierarchy of all the actions and possible outcomes, possible limitations and advantages of his/her (and also the hero's) skills at the same time. The gamer must think the situation through and look at it from different angles. It may happen that the chosen method fails and the gamer might be defeated or unsuccessful in his quest and so a different way will be chosen and tested.

### 3.2.4 Discussing a contradictory opinion

At this point in the thesis, it is necessary to mention and address one special opposite opinion. Probably the greatest argument against this possibility of learning may be found very well formed in an essay of Jonas Linderoth.

Games can be designed to facilitate both exploratory and performatory actions. This means that progressing in a game, being able to take actions and reach built-in game goals is not solely a matter of learning. Since affordances can be shown in a game, the player does not always have to learn to differentiate between the available information in the gaming domain. Instead, it is enough to learn to differentiate between the pale background and the bright glowing object in vision mode. (Linderoth 7)

In short, Linderoth is convinced that gamers are successful in games because games were designed to be solved easily. He reduces gaming to recognition of patterns, a discipline in which players only get better over time, but does not improve many other skills significantly. Linderoth in his argument introduces games, where objects related with (any sort of) progress are highlighted and through interaction the player only recognizes these patterns in different situations. This is, to some extent, plausible and understandable reproach. Many games are based on this very principle and it is a general trend (albeit despised by long-time gamers) of video games to make them simpler and thus more available (nowadays, the new genre of *casual* games has been introduced – these are games that are approachable by a person yet untouched by games and that does not require any other skills or are not that time consuming, as is engaging in complex storyline in other, more intricate and in-depth games). When video games are reduced to such form, it is questionable if there is any contribution at all – or maybe if the contribution is of a different form. However, to disprove his argument is rather easy. Linderoth does not take into consideration all possible genres and types of games,



his argument would for example fail in many cases of difficult and yet engaging RPGs (*especially* RPGs, which is a genre that was not discussed sufficiently in his paper). His examples are chosen well and they illustrate his point very well – but it does not change the fact that there is incredible high number of games where this “pattern-affordance recognition” does not occur or if it does, it is not remotely enough in order to succeed in them.

To clarify this point, getting back to *Arcanum* would reveal different conclusion that those made by Linderoth. In *Arcanum* (which is used only because the reader is now – at least partially – familiar with it, number of other games would serve this clarification as well), there are no special highlights or “coloured objects”, that would guide the player or give him or her a hint. Using poison and food to get rid of the rodents is not encouraged by any special pattern seen in the game; there is no universal mechanics that would differentiate between using a gun or a spell instead and problem solving in this case relies solely on the player’s ability and willingness to explore his or her possibilities. Linderoth had only explored one particular gaming mechanics and when he observed that it reappears in various cases, he jumped to conclusions by generalizing this point and applying it to all video games. Video games evolved into very variable category of entertainment, with naturally varying quality, difficulty or even possible contribution to education. It can not be stressed enough that this is why a teacher (or parent) is required, as a guide, evaluator and ultimately also an arbiter of how and in what the games may be beneficial and what else is just entertaining component.

### 3.3 Games and learning of language

#### 3.3.1 English as the main language of video games

Another contribution to teaching and learning with a rather different impact is the teaching of language skills, especially English (which is definitely the major language of games, regardless of their regional affiliation) for a non-native English speaking learner. In the questionnaires contained in this thesis, there was nobody who did not give credit to video games at least in one field, which was revealed to be language. Every single respondent confirmed the positive impact of video games on his or her language abilities; regardless of the specification of such a statement (some respondents commented on this extensively, for example, by explaining that their vocabulary had grown since they started playing the video games; others did not). What is even more interesting is the fact that almost all the parents of questioned children or students confirmed this information, only four in total of thirty parents denied any positive impact of videogames and perceive them only as pure entertainment for the child, whereas the rest of them admitted at least one positive result of playing video games, that is, improved English language skills. Such information obtained only from the students might signify that the gamers are trying to justify playing games to their parents or surroundings, when faced with negative attitude towards video games, and at the same time, the same information confirmed only by the parents and not really perceived by the children themselves could be less important for the definite result of such a statement, because it might point out that the student is not feeling any real progress himself and does not feel encouraged and interested by the language ingames at all. On the other hand, having such positive results confirmed by both groups, it is likely that there is actually an influence. RPG games are considered to be the most talkative of all the genres (together with *adventure* genre), consisting of wide dialogues and various descriptions of items, situations or expressions, plus including the most extensive gaming *lore* (explained earlier). Tomasz P. Szynalski from the

site *antimoon.com* (which is a site focused on learning English effectively from various everyday sources) uses *adventure* games to show their impact on English skills; “You program your brain with good English... You improve your understanding of spoken English... You learn the correct pronunciation... You learn the correct spelling of English words... You increase your motivation” (Szynalski). The following paragraphs should explain that RPG games provide the player with similar experience and also exemplify why and how exactly can specific situations in video games contribute to learning English in a very unique manner.

First and most importantly, video games offer a seamless connection between the language and the recipient, which can be hardly simulated by any other existing media. Unlike any other form of entertainment or education tool, games offer inimitable connection between visual and audio impulses, enhanced by the very necessity of the player’s contribution in order to experience the language further. Not only are the dialogues written down in the correct order (often re-readable to see past conversation and to choose the right answer or topic), in a way imitating a book or – more likely – a script to a theatrical play, vast majority of RPG games are also dubbed by the (semi-)professional voice actors, offering double stimulus. In this one particular aspect, the games are already better choice as an example language material for a young student, because the correct pronunciation is heard at the same time as the word is to be seen written down properly, which offers a huge advantage over books or movies. Game mechanics are mostly standardized in the manner how such a in-game dialogue looks like, one of the conventional practices is the pause of any other gaming events (such as fighting or time limit to some actions), so the possibility to write down or at least find a word that is unknown in the vocabulary is preserved.

### 3.3.2 RPGs as very diversified dictionaries

The most evident contribution of video games in studying languages is on the field of lexicology, simply because games offer vast and colourful expressions of all different areas of life – there are quests to find stolen gardening tools, to help with protection against wild animals or to solve a dispute over a relationship conflict, not to mention full dictionary of various activities a hero or a party can take part in every single minute of the game (such as combat, movement, strategic, magic, crafting or even chores). Such words are very often repeated and mentioned on various occasions in different ways and senses, ensuring that the player understood the task and is ready to complete it, integrating the words into the bigger picture of events and that all while the correct pronunciation and grammar usage are present. Due to technical and productional limitations, there are various phrases or sentences used all over again, most of the time repeated with no end. To further explain this point it is necessary to show actual example in particular game. An example would be a game called *Might and Magic VII: For Blood and Honor* (furthermore in this thesis mentioned only as *Might and Magic*).

In *Might and Magic*, the player controls a group of four characters traveling around the fictional continent, taking part in many adventures, quests for the crown (the game is set in the age of feudalism, with the royal family and rather medieval feeling) as well as the common people and also fighting a great variety of fantastic monsters. Due to its date of release and technical or financial limitations, the game is not fully dubbed, but every beginning of the conversation – initiated mostly by entering into various buildings, including houses of local people or shops and services, such as smithy or a pub – is followed by short voiced phrases, specific to the situations. Browsing in the wares of local armory results in the phrase “Do you see anything you want?” and for example entering the throne room is followed by royal exclamation “All hail the king!” These phrases are repeated every single

time the player enters such an occasion, regardless his progress or intentions when doing so. Originally, this was supposed to add special atmosphere and feeling of living city, but in itself it serves as a great tool for remembering certain phrases. There are two reasons for this – the first one is the attractiveness of such a shout, very often presented in buoyant voice with strong personal feeling and its constant repetition, resulting in the player remembering the phrase perfectly and often mimicking it, and the second one is the correct context of such a phrase.

### **3.3.3 Contextualized language situations and relevant responses in RPGs**

To expand on this point, as was mentioned before, the contextualized meaning and learning is very important and effective learning tool, making virtually any desired knowledge embodied in real situations. This is exactly such a case, because all the phrases of this game (and many others) are carefully selected to fit precisely to the situation of the party in game. The language, accent or content of a phrase is fitted with care to which situation it represents, resulting in vigorous and friendly, yet rather simplistic “Finest weapons in the land, my friend!” uttered by the local smith, or long and majestic introducing of a royal prince. This might not seem important, but it really makes the best use of any given situation when it comes to teaching exact language *feel* in various situations, helping the player to later think and recognize the different vocabulary, grammar and also pitch of speaker’s voice in different occasions, thus making him more precise in choosing the right way of using the language by himself. All this learning is completely natural and unintentional – teaching here occurs as a strictly coincidental element (which makes it random in its results). However, it is not very difficult to change this into more deliberate teaching. “The term incidental learning is used when discussing unintentional or unplanned learning that occurs in a particular situation. However, unintentional is easily changed to intentional. Suppose that I observe that in a particular situation, some desirable unintended or unplanned learning occurs. I then repeat this

teaching/learning situation with other students, with a specific intent that they learn what was previously considered unintentional. I make the unintentional learning intentional learning” (Morsund 4).

Lastly it is necessary to mention the necessity of player’s correct response when playing the game and thus providing immediate check of his understanding. Movies or books may be read or watched and listened in order to provide the same experience, but it is necessary to then put the student’s abilities to the test, in order to see if he or she understood the message. Video games are played willingly and very often voraciously, giving the best background for a student to maximize his focus and effort. In any dialogue, the player must respond correctly or at least somehow fittingly to the situation, in order to continue playing. Not responding at all would not move the game any further and responding mindlessly with random clicking will result in highly unsatisfactory game, full of unwanted events (as an example may serve a rude or aggressive talk to the king in *Might and Magic* after the group performs some outlawed actions, resulting in the party being killed or imprisoned). It is nothing unusual to see an RPG gamer trying to seek the correct translation of some dialogue options and detailed descriptions of some unknown words, in order to avoid ambiguity and to secure correct and desired transfer of information between him/her (or more precisely, his/her party) and the characters in game. This self-regulating and discreetly examining mechanism of player’s usage of language is absolutely rare and should be noted and used by the parent or teachers knowing that a child is playing such a game where this occurs.

### **3.4 Other possible benefits of the RPG video games in question**

There are numbers of yet here undiscussed, but most probably also strongly beneficial factors that may enhance other skills and attributes of a player. To ensure a compact and functional argument, some of those are not described here – mostly because the sheer immensity of potential in these areas would every single one cover several books or studies. Nevertheless, they deserve to be mentioned in order to truly mediate theoretically the very flexible and versatile use of video games in education, or even the general upbringing of a child.

#### **3.4.1 Digital literacy and enhanced reflexes**

Video games also – with no real exception regarding platform or genre – highly enhance reflexes, brain responsiveness and perception, as well as hand-to-eye dexterity. There are literally hundreds of such studies, occupying themselves with this topic, some of them originated in very professional and academic institutions. They also connect the player with the world of digital technology, which basically means that they have positive effect in understanding the digital world in general and help to incorporate such domains into everyday life. With rising tendency to digitalize everything and to move jobs, education and entertainment, it is surely beneficial to connect digital literacy with daily use. It might be discussed if such a tendency is positive for general culture of western world and humankind itself, but as long as it happens, it is better to be prepared and to know how to be knowledgeable in such area. Very well known phenomenon of nowadays children sometimes understanding electronic devices or software applications much better than anyone else in the family, is a result of them being familiar with such a world also through games.

### **3.4.2 Improving of social skills and behaviour**

Another sub-genre of RPG video games are so-called MMORPGs, which is an abbreviation that stands for massive multiplayer role playing game. To explain what the detailed specifics of such a game are would be too exhaustive and not really connected to this particular topic discussed here, but at least to make a general point, it is sufficient to say that MMORPG video games are those, that connect players from all around the world, transform them into one community and let them play one (otherwise rather regular) RPG story with a possibility of cooperation, competition and also engaging in social activities. Those games (and in a global sense, any multiplayer online games in general) have extremely huge potential in understanding and teaching socialization, cooperation, theory of groups or cultures and great deal of other very plausible theoretical outcomes. There are already numbers of works on this particular topic, so anyone interested in this topic may find various studies, describing it in a great detail.

### **3.4.3 Projective identity as a tool for learning morality, empathy and ethics**

Last but not least, RPG video games introduce the player into the issue of projective identity. The hero controlled by the player was created specifically to fulfil gamers' ideas about a true protagonist, both in appearance and personality. It is not uncommon for a player to create a hero that would somehow reflect his/her real-life personality (most RPG video games allow at least some sort of personalization, at least in gender, name or hairstyle). This happens unintentionally and as a byproduct of playing the game. There are completely legitimate situations, where the player can make a decision, which is not going to be anyhow penalized and is not regarded as wrong by either game mechanics or moral codex of the characters in it. James Paul Gee comments on this while playing *Arcanum* (as a woman half-



elf), after a rushed decision to sell the ring that was given to him by a dying man. “I wanted her to be a creature who acted more intelligently and more cautiously, a creature who could eventually look back on the history of her acts without regret. I felt I had “let her down” and started the game all over again” (Gee 57). It is a very interesting point to mention that this decision does not affect in-game karma (a system measuring in numbers how good or bad in general sense does the player behave), nor further progress in the story (although the ring proves to be important to some extent). By returning back to the beginning of the game would not bring to Gee anything but better feeling. He gave and employed some attributes given to his character beyond the game, beyond his own personality.

The player then after some time builds up a connection with his character (at least in a good, immersive game) and unites his character with his own personality – very often coming up with personal statements, such as “I just saved a village, but I rejected any payment. They need the money now, after being raided by orcs – and I am pretty rich/humble/virtuous man anyway.” It is very interesting to notice that the player is then talking about *him- or herself* really being in the game and making decisions or taking part in action, while he or she should really be talking about *his/her character* doing so. Levels of connection with player’s main character are very often deeper than it might be expected by a non-gamer. There are genuine emotions coming out from such a relationship between created, developed character, and its master. RPGs are highly successful in creating difficult moral decisions that would not really be downright heroic or evil. They can also easily produce a situation, where it would be much more rewarding for a player to choose morally wrong path (for example by getting paid for blackmailing or hurting an innocent person), but the player chooses good or role-fitting solution, simply because deep personal connection with the characters. One of the most important and influential RPG series of all time, *Ultima* by Richard Garriot, actually built up its whole gaming system around the player making variable moral decisions. “Garriott also

resolved to track players' behaviour in the game to assess how virtuous they were rather than simply encouraging players to build up numerical attributes, as was the norm in role-playing games" (Donovan). *Ultima* really focused on making the player understand his choices and their further impact – and it is certainly not the only RPG that became praised for this aspect. Facing such challenge in-game allows any parent or teacher to have clear, variable and viable environment for creating or simulating ethically very important, difficult or ambiguous situations and to give children some sort of useful moral advice.

## 4 CONCLUSION

During the research for this thesis and its subsequent writing, probably the most recurring topic was the amount of interest that teachers or parents are willing to give to their children's hobbies. This proved to be the foundation of all the following topics, required in successful and beneficial usage of RPG video games in modern education. It is vital that video games overall must not be (at least not entirely) neglected and denied by all teachers, whose goal, in addition to educating, is to prepare an entertaining and engaging class for the children they teach. It was confirmed that video games globally, together with other modern media (based mostly on the Internet) may (at least to some extent) constitute a new approach in education.

It was established that RPG video games have a very promising potential in various areas, especially in learning English, the learning of critical thinking and in offering motivation to the students, as well as serving as an inspiration for teachers showing how it might be possible to construct their whole system (or a part of it) of teaching. In order to demonstrate that the ecologies and environments of RPGs are a good background for almost any possible learning, the author of this thesis attempted to support his ideas with appropriate research and quotation, there was also a very strong effort to give good examples from popular games and to explain them that they may be comprehensible even for a person not interested in video games at all.

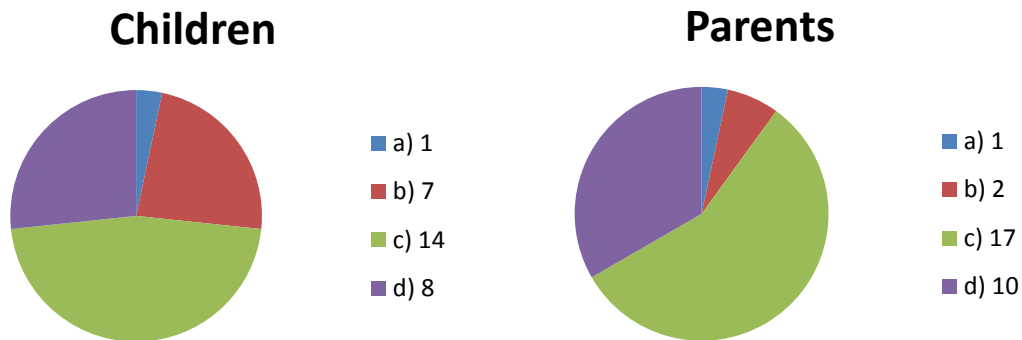
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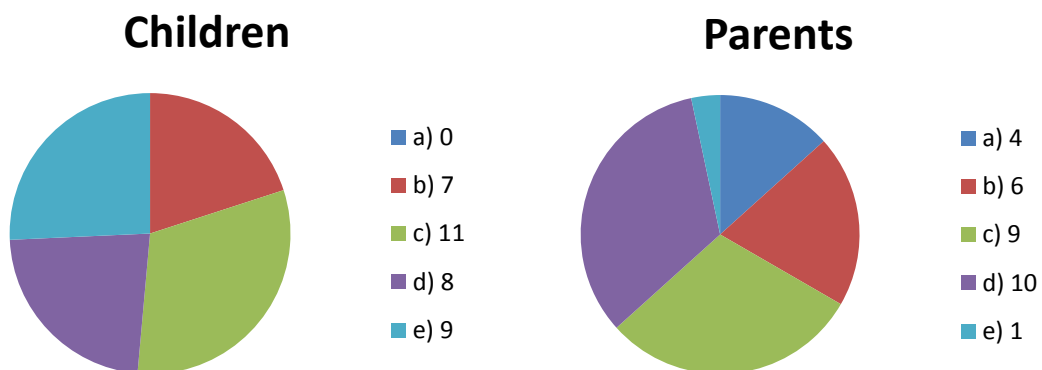
## 6 APPENDIX

The questionnaires were given to thirty families in total, the age of the children and parents varied greatly, as well as did their social and financial backgrounds. The questionnaire was always presented in the same form as below, with the frequent necessity to translate the questions and answers to both some children (sometimes used in the lecture as an exercise) and parents.

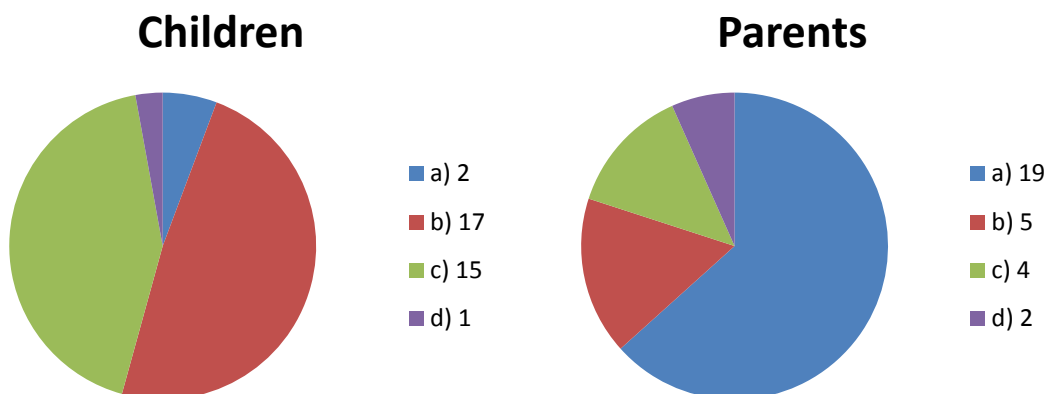
### Results of question number one:



### Results of question number two:



### Results of question number three:



## Student of appropriate age (12 to 19)

### 1) How much time do you spend on playing video games?

- a) less than an hour per week
- b) one to five hours per week
- c) five to ten hours per week
- d) ten or more hours per week

### 2) Do you feel any enhancing experience that could be related to playing video games?

- a) None whatsoever, it is purely for fun or downright useless
- b) I may have slightly improved in one particular field of study or useful skill
- c) I almost certainly improved significantly in one particular field of study or useful skill
- d) I feel slight improvement in more than one particular field of study or useful skill
- e) I am almost certainly much better in various fields of study or useful skills

Exemplify or explain: .....  
(examples of previously stated fields of study or useful skills may include following – technical skills, foreign language, notably better reflexes, improved decision making, improved critical approach to various problems, improved speed or success when solving logical equations, improved knowledge of history, social sciences, politics or geography, improved social skills as communication, empathy, etc.)

### 3) How would you characterize your attitude towards video games?

- a) They are nothing but rather mindless fun, helping me to relax – as well as for example watching action movies and sitcoms
- b) They are interactive form of having fun, that makes me think and react with some effort – so I would compare them to reading a good book, watching interesting scientific TV show or playing some sort of board game with friends
- c) They are posing not only some fun, but also a certain challenge, that makes me think really hard, train myself by trial and error and sometimes even encourage me to study materials beyond the game (for various reasons) – as well as some interesting group activity, workshop, school project
- d) They are a perfect combination of interactive entertainment and education system itself and I think that they combine fun, good learning and personal improvement as no other media in nowadays society

## Parent of this particular student

### 1) How much time does your child spend on playing video games?

- a) less than an hour per week
- b) one to five hours per week
- c) five to ten hours per week
- d) ten or more hours per week

### 2) Do you feel any improvement of your child – for example at school, in his other hobbies or maybe in his interests – which you can relate to playing video games?

- a) No, none – or on the contrary, I personally think that he is worse at school or less skilful (for example less dexterous or slower ) because of playing those games
- b) He may have slightly improved in one particular field of study or useful skill
- c) He certainly improved significantly in one particular field of study or useful skill
- d) He probably improved slightly in more than one particular field of study or useful skill
- e) He is almost certainly much better in various fields of study or useful skills

Exemplify or explain: .....  
(examples of previously stated fields of study or useful skills may include following – technical skills, foreign language, notably better reflexes, improved decision making, improved critical approach to various problems, improved speed or success when solving logical equations, improved knowledge of history, social sciences, politics or geography, improved social skills as empathy, etc.)

### 3) Do you know what kind of games does your child play? How well do you know those games (their genre, content, storyline, characters, difficulty etc.)?

- a) I have no idea, I am not interested in games at all – the child picks the games on his/her own and plays them alone or with friends.
- b) I know what kind of games (at least genre) he/she plays; we (parents) have general idea what does our child do in most of his/her games.
- c) Yes, we help our child to pick the right game, based on his/her age, interests and skills. We also check every single game, whether or not is it appropriate.
- d) Yes, absolutely – we know every game he/she has in possession and we also play the games with our child (at least sometimes), in order to understand his/her hobby better. We also talk about games at home a lot.

