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Будз Ірина Федорівна, к.пед.н., доцент кафедри романо-германської філології, **Мальований Всеволод Володимирович**, ст. 2 курсу магістратури історико-філологічного факультету (Міжнародний економіко-гуманітарний університет імені академіка Степана Дем'янчука, м. Рівне), ibudz@ukr.net

ВПЛИВ КОМП'ЮТЕРНИХ ІГОР НА ФОРМУВАННЯ МОВНОЇ КОМПЕТЕНЦІЇ УЧНІВ У ПРОЦЕСІ ВИВЧЕННЯ АНГЛІЙСЬКОЇ МОВИ

Анотація. *У статті досліджено формування мовної компетенції учнів засобами комп'ютерних відеоігор, проаналізовано особливості різних жанрів ігор та здійснено їхню класифікацію з точки зору формування різних типів мовної компетенції. Окреслено історичне тло виникнення відео ігор, що сприяло розумінню їхньої інтеграції до освітнього процесу як альтернативного засобу вивчення англійської мови у позакласній діяльності. Визначено, що аспект впливу відеоігор на фізичне та ментальне здоров'я має дискурсивний характер; помірковане використання комп'ютерних ігор може мати позитивний навчальний ефект та сприяти зростанню творчого потенціалу учнів.*

Ключові слова: *мовна компетенція, лінгвістична компетенція, комп'ютерні ігри, відео ігри, браузерні ігри, рольові відео ігри, англійська мова, формування мовної компетенції.*

Budz Iryna Fedorivna, Ph.D in Pedagogical Sciences, Associate Professor of the Department of Romano-Germanic Philology, **Malovanyi Vsevolod Volodymyrovych**, 2-nd year Master Degree Student of History and Philology Faculty (Academician Stepan Demianchuk International University of Economics and Humanities), ibudz@ukr.net

THE INFLUENCE OF COMPUTER GAMES ON THE FORMATION OF STUDENTS' LANGUAGE COMPETENCE IN THE PROCESS OF ENGLISH LANGUAGE LEARNING

Abstract.

Introduction. *The prospects of education in digital era highly depend on modern IT provision, as well as alternative sources of learning in extracurricular activities. Computer games gain popularity around the world and can be*

considered as an effective tool in skills development of students, particularly in foreign language learning.

Purpose. *The aim of the article is to analyse the role of computer games in language competence formation in the process of learning English and define the groups of video games that impact on specific language competences.*

Methods. *The research's purpose and object determine the use of the descriptive methods for identification of genre peculiarities of video games, methods for analysing the effective formation of English language learning competences, as well as the method of comparable research in the work.*

Results. *The historical background of the emergence of video games is outlined, which contributed to the understanding of their integration into the educational process as an alternative means of learning English in extracurricular activities. The impact of video games on physical and mental health has been identified as discursive; moderate use of computer games can have a positive educational effect. The extensive positive effects of video games consist in usage of controllers, which involve active motor activity, develops motor skills, increases motivation to exercise and improves socialisation. Video games train children's ability to look for problem solutions, make optimal decisions, facilitate communication with peers, develop teamwork skills, and relieve stress. The influence of computer games on the formation of students' language competence in the process of learning English was examined. The benefits of their use in education process are highlighted and the results of using video games are estimated. In the course of the study, a number of computer video games has been analysed and their classification has been developed.*

Originality. *Video games have been classified according to the language competences they impact, namely: lexical competence formation; grammatical competence formation; orthographic competence formation; phonologic competence formation; semantic competence formation; communicative competence formation. It was realized that classified video games can develop several language competences simultaneously, namely: the set of browser games mainly form lexical and grammatical language competences; role-playing games are responsible for the range of language competences, such as: lexical, grammatical, semantical, communicative and phonological as well; action games contribute to lexical, grammatical and orthographical language competences development.*

Conclusion. *The use of computer games in language learning process boost students' linguistic skills in learning new vocabulary, text comprehension, pronunciation, grammar and communication. In the course of our study, analysis of various video games genres certified that primarily entertaining role of computer games was changed for skills forming. It was defined that non-excessive engagement of students into gaming process can have positive educational effect and facilitate in their creative potential growth.*

Key words: *language competence; linguistic competence; computer games; video games; browser games; role-playing games; the English language; language competence formation.*

The urgency of the problem consists in increasing usage of the latest technology by the new generation. The prospects of education in digital era highly depend on modern IT provision, as well as alternative sources of learning in extra classroom activity. Computer games gain popularity around the world, due to the fact that they can both entertain and teach people new and can be considered as an effective tool in skills development of students, particularly in foreign language learning.

Problem analysis. The problems of students language competence formation and computer games impact in the process of language learning have been studied by domestic and foreign scholars as well, in particular: Y. Apresian, M. Bilohorka, N. Chomsky, J. Green, M. Havrylovska, I. Horielov, D. Hymes, T. Kovalova, O. Kucheruk, V. Luhovyi, L. Meleshko, T. Moroz, E. Pasov, D. Slobin, A. Tokarieva, M. Viatiutniev, etc.

The analysis of scientific resources shows an increasing interest in the problem of the influence of computer games on the process of English language learning. The efficiency of computer games usage at English lessons is proved by T. Kovalova. In her research reasons of change in the attitude to computer games are enumerated, the benefits of their use in education are highlighted, the results of using games at Foreign Language lessons are analysed; methods of the use of certain computer games at English lessons are described as well [1].

A. Tokarieva analyses the educational potential of computer video games, the advantages, problems and prospects of computer video games introduction in the modern educational process. Based on the theoretical analysis, the scientist gives the definition of «computer video games», «serious video games» and their essential characteristics are outlined [2].

Concepts of language and speech competencies were studied by such scholars as Y. Apresian, I. Gorelov, J. Green, E. Pasov, D. Slobin, M. Viatiutniev and others. The distinction between linguistic competence (knowledge of the system of rules that govern a language) and individual performance as a user of a language is disclosed by N. Chomsky [3].

The purpose of the article is to analyse the role of computer games in language competence formation in the process of learning English and define the groups of video games that impact on specific language competences.

Linguistic competence (from Latin «competens» – appropriate) is the knowledge of norms and rules of modern literary language and their skilful use in the production of utterance. It consists of lexical, grammatical, semantic, phonological, orthographic, orthoepic and punctuation competences. The term

«language competence» was introduced by Noam Chomsky around the middle of XX century and it is semantically opposed to the term «use of language» [3].

N. Chomsky interpreted language competence «as the ideal knowledge of the speaker-listener about his language». According to the researcher, the basis of language competence is the innate knowledge of basic linguistic categories and the child's ability to «construct grammar for themselves» and the rules of describing sentences perceived in the language environment [3]. American scientist D. Hymes denies the opposite statement of N. Chomsky. He states: «There are rules of usability, without them there is no use of grammar rules» [4]. Language competence is a complex psychological system. It includes information about the language studied in the learning process and the language experience of everyday communication, and on its basis, it is the sense of the language. Further projection of the analysed phenomenon not only on the language, but also on a speaker and speech processes led to a distinction between the concepts of language and speech competences and competences in whole. Linguistic competence is considered as a phenomenon of a certain awareness level of a particular subject or subjects with an ideal sign system of a native or foreign language (languages), and speech as a person's ability to practical knowledge of the language in communication. Traditionally linguistic competencies are gained through classroom educational approach. However, nowadays, extra classroom activities play an important role in English language learning. Due to the global digitalization a number of computer programmes, applications as well as computer video games aim at foreign language studying.

A video game is an electronic game in which a user interface is served to obtain feedback from a video device. The advent of video games was preceded by the development of programmable computers and imaging technologies on the screens of electronic devices. Various electronic and mechanical gaming devices existed in the first half of XX century but were not widespread enough. The forerunners of video games are the Cathode ray tube Amusement Device, patented by Thomas Goldsmith Jr. and East Ray Mann on December 14, 1948, and a chess computer program developed in 1947 by Alan Turing. Initially, game programs, such as chess or tic-tac-toe, were developed as a part of the US military program in an effort to create a computer capable of predicting the actions of an enemy [5].

The first successful attempt to create an entertaining device that uses video feedback for a player belongs to William Higginbotham. In 1958, he developed Tennis For Two, but did not consider the game as something important and eventually disassembled the equipment for other scientific projects [5].

In the 1960s, students at the Massachusetts Institute of Technology wrote the game Spacewar!, which in 1966 prompted Sanders Associates to consider creating a gaming device that would be connected to home TV-sets. When computers became relatively cheap and could be used not only by scientific institutions,

Stanford student Bill Pitts, impressed by Spacewar!, decided to create a device specifically for games called Galaxy Game based on the PDP-11 computer. Together with his friend Hugh Tak, he developed a slot machine that gave the opportunity to play a game for coins and thus it would pay off for itself. With the support of Nolan Bushnell of Nutting Associates, this slot machine, Computer Space and the eponymous game in 1971, became the first commercial video game device. In early 1972, the first home gaming console, the Magnavox Odyssey, appeared, which could be connected to a regular TV-set. The impetus for the video game industry was the high popularity of first arcade games (1972) and then home video game Pong (1975), as its commercial success led to the emergence of a large number of clones from other companies [5].

Set of browser games is a type of video games which use a web browser interface. Such games come in a variety of genres and usually do not require the installation of software, besides the browser itself and are free of charge. Due to the availability of browser games, they are played more than traditional computer games. In 1995, FutureWave Software, willing to challenge Macromedia Shockwave, changed its SmartSketch software to add animation tools. The tools were released in FutureSplash Animator for PC and Macintosh. In December 1996, FutromWave acquired Macromedia, and the animation editor was renamed Macromedia Flash. This and the release of the ActionScript programming language were among the first ways for developers to create games for browsers. Sun Microsystems also launched the HotJava website in 1997, which hosted "applets" that users could run in any browser running Java [6]. One of the earliest popular Java-based gaming websites was ClassicGames.com, the largest selection of multiplayer Java games on the Internet, which hosted a variety of games such as chess, checkers, and Freecell. It attracted the attention of companies after the rapid growth of the site, for example, the number of registered users on the site increased from 50,000 to 60,000 in November-December 1997. It was bought by Yahoo! in 1998 and evolved into Yahoo! Games.

The question of the impact of video games on physical and mental health has emerged since the 1980s and is considered mainly in the context of video game addiction. The US Secretary of Health Everett Koop first talked about the harm of video games on a speech on November 9, 1982, where he pointed out the children's dependence on them. Over the years, the research has shown that excessive obsession with video games can turn into a video game addiction, which has both physiological and emotional symptoms. Namely: fatigue, migraine due to eye strain, carpal tunnel syndrome caused by excessive use of gamepads or computer mouse, neglect of personal hygiene, anxiety and irritability outside the game, concern about past and future sessions of the game, deception of loved ones about the time spent for games, self-isolation in order to devote more time to video games. However, the fascination does not arise because of the properties of the video games but is manifested in those people

who already suffer from depression, low self-esteem, have weak social skills and are disorganised [7]. The US Government and the US National Endowment for the Arts officially recognised video games as a form of art in 2011 [8]. However, the worldwide recognition remains a debatable issue.

Contrary to these claims, the extensive positive effects of video games include the use of controllers, which involve active motor activity, develops motor skills, increases motivation to exercise and improves socialisation. Video games train children's ability to look for problem solutions, make optimal decisions, facilitate communication with peers, develop teamwork skills, and relieve stress. Video games improve object recognition and spatial orientation skills, working memory and attention of children, adolescents and adults [9].

In the course of the research, we have studied a number of computer games and their influence on the formation of linguistic competences. We have classified video games according to the language competences they impact, namely:

1. Lexical competence formation (Phasmophobia, Browser games, Civilization, The Witcher, Mass Effect, Undertale, Fallout, The Elder Scrolls, Hand of Fate 2, The Typing of the Living Dead);

2. Grammatical competence formation (Browser games, Civilization, Among us, The Typing of the Living Dead, Hand of Fate 2);

3. Orthographic competence formation (Browser games, The Typing of the Living Dead);

4. Phonologic competence formation (Phasmophobia, Set of Browser, The Witcher, Mass Effect, Fallout, Among us, The Elder Scrolls);

5. Semantic competence formation (Phasmophobia, Set of Browser, Civilization, The Witcher, Mass Effect, Undertale, Fallout, The Elder Scrolls, Hand of Fate 2);

6. Communicative competence formation (Among us, Fallout, The Elder Scrolls).

Video games are subdivided into role-playing games (RPG), action, racing, strategic, simulation, sports, adventure games etc. These genres include a large number of games which requires the English language as a means of play and communication. This circumstance facilitates in learning or improving the foreign language. For example, the game «The Typing of the Living Dead» contributes to development of lexical, grammatical and orthographic competences due to its playing mechanics that is familiar to a «zombie shooter» genre. According to the rules of the video game, a player needs to write a word that is highlighted on the screen in order to overcome a «zombie». In case of a misspelt or omitted word, the game will be over and ought to be started from the beginning. The more a player tries to pass the level, the faster he types. The game also encourages to read jokes and interesting short stories. This video game teaches spelling, as well as fast typing, skills highly demanded in today's globalized world. In addition, the game can be played on different difficulty levels that can be either

increased or decreased. The vocabulary used on each level of difficulty is appropriate to language learning levels (from A 1 to B 2). A common lexicon of A1–2 levels consists of neutral and colloquial vocabulary, namely: *tear, mean, finger, stretch, radioactive, brain, sick, plague, pain, quick, vice, twist, nuance, wide, load, chicken, shark, tooth, mayhem, mate, kitten, change, fear, people, saxophone, mirror, image, warmer, confidence, creative, think, apart, music, dirty, weekend, monster, need, love, weigh, cheese* etc. On the higher levels of difficulty specific vocabulary and terms are used, namely: *viscosity, solar panda, long-distance running, bad investment, asynchronous orbit* etc.

«Hand of Fate 2» is a dark fantasy video game, a live «board game» in digital form, each level of which consists of cards that a player chooses. In order to pass the video game a player needs to defeat an opponent who accidentally gives cards to choose from. The game proposes various plots that requires a lot of reading to understand how to act further. It provides a possibility to learn new vocabulary since the game includes a number of interesting short stories. For example, the beginning of a story encourages a player to search for unknown vocabulary and demands basic knowledge of grammar: *«The shrill voice of the town crier rings out across the market. The emperor himself seeks Adventurer's Guild members. Urgent expedition, vital to the safety of the Empire! You spot a crowd of travellers, weighed down with weapons and tools, lingering nearby. The Empire is offering a reward just to set off on the expedition, even more if we make it back. That's how desperate they are for help»*. Thus, the game facilitates in formation of lexical, semantical and grammatical competences.

Role-playing games (RPG) are entertaining games in which participants take a certain role and collectively create a story or follow an existing one (usually based on works of fiction), acting in accordance with their roles in fictional situations. In particular, a choice to act and interfere as an honest hero or as a thief develops student' creative thinking. We analysed the impact of two video games in this genre «The Elder Scrolls» and «Fallout» on language learning formation. These two role-playing video games are similar in their manner but have different plots and circumstances. These video games require communication between a player and «non-player characters» (NPC – a character controlled by the program). Subtitles are provided in order not only to listen to what the NPC says but also to read for better comprehension. Taking into consideration teaching purposes of such video games the focus is on new vocabulary and pronunciation. RPG aim at interaction and, as a result, at development of communicative skills. A probable conversation between a player and a NPC can be acted out in such way:

The NPC: *Hello warrior. My name is Asteria, a traveling bard on her way to Markath. If you would like to hear a song, do not hesitate to make a request. I require no coin or patronage for my services. All I ask in return is the following*

favour. Should my verse please you, then I would be gracious if you spread word of my song to the citizens of the Reach.

Player: *Another bard. You singers worse than fleas.*

The NPC (laughs): *I'd venture that's true. But how can you blame us? Mages are prestigious. Warriors are romantic. Only the bards lay claim to both. For what is music than a cure for the day.*

Player: *Where have you trained?*

The NPC: *Not at the bard's college, if that's what you're implying. If my skill were lacking, you would discover that soon enough.*

Player: *Education through experience. I follow a similar philosophy.*

The NPC: *There are many roads to wisdom but not all of them are interesting.*

Player: *I'd like to make a request.*

The NPC: *As you wish. What would you like me to play?*

Player: *I want to hear the traditional Nord song «The Dragon Comes».*

The NPC: *Ah, a fine request. I would be honoured to sing this for you.* (The bard starts to play)

«Among us» is a science fiction deductive game about murders, which is designed for many users. There are two teams: a spaceship crew and one or two impostors. The task of the crew is to repair the spaceship and find those who destroy it. The goal of the impostors, on the contrary, is to destroy it and all the crew members. During the game, impostors must act secretly. If a player notices an imposter destroying a ship or destroys his team member, he must report it to others. That is why, the most important game element is so-called «Emergency meeting». In this meeting, a player must prove to everyone that a suspect is an impostor. In addition, the impostor has the right to speak, therefore he can prove his innocence and blame someone else. In this meeting, only one minute is provided to talk that makes this conversation accurate and quick. The game continues until the crew members find an impostor or the impostors defeat. As interactions between the users are carried out via discussions every 10–20 minutes of playing time, communicative skills are highly developed. Thus, «Among us» enables formation of communicative as well as lexical, grammatical and phonological competences. The vocabulary in this game may vary from A 1 to B 2 due to the players' level.

Browser games are widely used for learning language purposes. There are a large number of different exercises such as inserting an omitted word, matching a right object etc. In addition, each word is visualised to make students remember new words faster. The vocabulary in such exercises is basic (A 1–A 2 levels), for instance: *open, put, witch, ball, shut, kick, jump, close, catch, open, push, pull, run, candle, snowman, star, cat, cow, dog, giraffe, rabbit, cake, bacon, coffee, chocolate, fish, grey, black, red* etc. Such exercises aim at learning new vocabulary and improving lexical and grammatical learning competence.

In particular, video games primarily were designed to entertain but nowadays they can be used with training and teaching purposes. Playing a video game in a foreign language contributes to memorising a word in order to play or just complete the game. Moreover, since the game can be played more than once, users will find something new every time.

Conclusion. Thus, we consider video games as an effective teaching tool in extra classroom education that impact on the formation of students' language competence. The use of computer games in language learning process boost students' linguistic skills in learning new vocabulary, text comprehension, pronunciation, grammar and communication.

In the course of our study, analysis of various video games genres certified that primarily entertaining role of computer games was changed for skills forming. It was realized that classified video games can develop several language competences simultaneously, namely:

– the set of browser games mainly form lexical and grammatical language competences;

– role-playing games are responsible for the range of language competences, such as: lexical, grammatical, semantical, communicative and phonological as well;

– action games contribute to lexical, grammatical and orthographical language competences development.

We defined that computer games can be used as alternative source of foreign language learning in extra classroom students' activity.

Taking into account disputable impact aspect of video games on physical and mental health, it is worth mentioning that only non-excessive engagement of students into gaming process can have positive educational effect and facilitate in their creative potential growth.

Therefore, our research contributes to the further scientific discussions about effects of alternative means of students' language competence formation in the process of a foreign language learning beyond the classroom.

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