

T.C.
Marmara Üniversitesi
Eğitim Bilimleri Enstitüsü
Yabancı Diller Eğitimi Anabilim Dalı
İngilizce Öğretmenliği Bilim Dalı

**TEK OYUNCULU BİLGİSAYAR OYUNLARININ KELİME
ÖĞRENİME ETKİSİ**

Yüksek Lisans Tezi

Ercan ERKUŞ

İstanbul, 2008

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Danışman: Yard. Doç. Dr. Leyla ILGIN

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Ercan ERKUŞ

Yard. Doç. Dr. Leyla ILGIN

Yard. Doç. Dr. Kamile HAMİLOĞLU

Yard. Doç. Dr. Aybars ERÖZDEN

Yabancı Diller Eğitimi Anabilim Dalı İngilizce Öğretmenliği Bilim Dalı

Yüksek Lisans Tezi

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GİRİŞ

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KISA ÖZET

Tek Oyunculu Bilgisayar Oyunlarının Kelime Öğrenime Etkisi

Ercan ERKUŞ

Günümüz dünyası birçok teknolojik gelişmeye tanık olmaktadır ve bunların içinde Bilgisayar ve özellikle Internet en önemli iki icat olarak öne çıkmaktadır. Eğitim dünyası da bu gelişmelerden yararlanmaya başlamış ve özellikle bilgisayar destekli eğitim popülaritesini artırmıştır. Bu çalışma üniversite öğrencileri üzerinde tek oyunculu bilgisayar oyunlarının kelime öğrenimine etkisi olup olmadığını ortaya koymak amacıyla yapılmıştır. Çalışma aynı zamanda Orta-İleri İngilizce düzeyinde İngilizce eğitimi alan öğrencilerin bilgisayar oyunlarının kelime dağarcıklarını geliştirip geliştirmediği konusundaki fikirlerini öğrenmeyi de amaçlamaktadır.

Araştırmaya Yıldız Teknik Üniversitesinin, kontrol grup olarak İleri İngilizce Okuma ve Yazma derslerini alan, denek grubu olarak da bu dersi almayan, değişik mühendislik sınıflarından seçilmiş 70 öğrencisi katılmıştır. Çalışma ile ilgili veriler, hazırlanmış sormacalar ve testler yardımıyla elde edilmiştir. Araştırma 2006-2007 eğitim yılının güz döneminde 15 hafta boyunca devam etmiş, ön anket ve ön test dönem başında Eylül ayında, son anket ve son test de Ocak ayında uygulanmıştır. Veri analizi için SPSS 12.0 programı ve kodlama sistemi (Miles ve Huberman, 1994) kullanılmıştır.

Bu çalışmaya başlamadan önce, tek oyunculu bilgisayar oyunlarının kelime öğrenimine olumlu katkısı olduğu savunulmuştur. Ayrıca deneklerin bilgisayar oyunlarının kelime

öğrenimlerine anlamlı katkı bulunduđu ve kelime dağarcıklarını geliştirdirdiđi yönünde fikir beyan etmeleri orta seviyede varsayımlar arasındadır. Araştıma sonunda verilerin incelenmesi ile, bilgisayar oyunlarının kelime öğrenimine anlamlı bir katkıda bulunmadıđı, ancak öğrencilerin bilgisayar oyunlarının kelime dağarcıklarını geliştirmesi ile ilgili sorulan sormacalarda, bu konuda olumlu düşündükleri ortaya çıkmıştır.

ABSTRACT

The Effects of Single-Player Computer Games on Vocabulary Learning

Ercan ERKUŞ

Today witnesses many technological inventions. Internet and computer industry are two vital innovations among the others. Education has also got its share in which the use of multimedia tools such as a combination of audio and visual materials. This paper mainly investigates if the use of single-player computer games has positive effects on learning a new set of vocabulary. It also aims to get feedback from students at Upper-Intermediate level about their ideas whether computer games improve their vocabulary knowledge or not.

The research has been conducted among 70 students randomly selected from different engineering departments, half of whom cover Advanced English 1 (Reading and Writing) lesson at Yıldız Technical University as the control group and half of whom do not as the experiment group. A qualitative method was used in which pre and post tests, and also introspective and retrospective questionnaires were applied. The research lasted 15 weeks in the Fall Term of 2006-2007 Academic Year, an introspective questionnaire and pre-test were given at the beginning of the term in September, and a retrospective questionnaire and post-test were applied at the end of the term in January. Quantitatively, the pre and post-tests were evaluated using SPSS 12.0 program and pattern-coding (Miles and Huberman, 1994) was used to interpret the answers of the open-ended questions and to reach more well-grounded conclusions, qualitatively.

At the beginning of the study, it was estimated that single-player computer games have a meaningful effect on vocabulary learning. Furthermore, it was expected at a medium level

that the subjects would think that computer games improve their vocabulary knowledge and have positive effect on their vocabulary learning. At the end of the evaluation of the results, it has revealed that single-player computer games do not have a meaningful efficiency on vocabulary learning, however, the students think that single-player computer games have a positive effect on learning a new set of vocabulary.

ABBREVIATIONS

CAL – Computer Assisted Learning

CALL - Computer Assisted Language Learning

PC – Personal Computer

VR – Virtual Reality

2D – Two Dimensional

3D – Three Dimensional

SREB – Southern Regional Education Board

I – Interactive

NI – Non-Interactive

SMS – Short Message Service

ICT – Information Communication Technologies

CSI – Cognitive Style Index

CCI – Classroom Community Index

SIALS – Second International Adult Literacy Survey

MUD – Multi-player Games

FPS – First Person Shooter

RPG – Role-playing Games

NPCS – Non-player Characters

RTS – Real-time Strategy Games

NYU – New York University

SUNY – State University of New York

MMORPG – Multi-player Online Role-playing Games

FAS – Fetal Alcohol syndrome

BAFTA – British Academy of Film and Television of Arts

AIAS – The Academy of Interactive Arts

INTRODUCTION

The 21st epoch has been an onset of innovations in all aspects of life with its pros and cons. Although the latter seems to be dominant when one criticizes the ongoing events around the world, humans also benefit from some developments such as technology. Today witnesses many technological inventions. Internet and computer industry are two vital innovations among the others. Humanity has begun to use both of them in every context, especially in communication.

Education has also got its share in which the use of multimedia tools such as a combination of audio and visual materials cognate the imagery capacity of individuals, that is the pictures in the mind which are representations of something similar, because these tools facilitate recalling substantial details. These artificial memory aids are also called mnemonics which help to organize information for memorization. Thus, computers and several software programmes create the required atmosphere to acquire any new information efficiently and facilitate learning. Related to these; computer-assisted learning, e-learning or computer games trends have gained great popularity.

1.1 Background of the Study

Although each aforementioned innovation has different terminologies, requirements and qualifications, all of them serve for similar purposes, such as improving the quality of education in and outside the class, breaking the barriers of time and place limitations between teacher and student interaction, accelerating the acquisition of a second language etc. In order to teach anything effectively to the new generation students, all of the concepts mentioned

above seem to be the best tools to hunt them in the place where they like spending most of their time - in front of the computer screen and keyboard.

Exploring games and education is inherently controversial. Games can seem uneducational; they are typically associated with play and childhood. Even the name implies that games are the opposite of work. Assertions that games must be used to make learning “fun” ignore the fact that students who are deeply engaged in learning consider it both fun and hard work. For many educators, the term “game” associates a mental image of playing cards or a game like Jeopardy. Today’s games are complex, take up to 100 hours, require collaboration with others, and involve developing values, insights, and new knowledge. They are immersive virtual worlds that are increased by a more complex external environment that involves communities of practice, the buying and selling of game items, blogs, and developer communities. In many ways, games have become complex learning systems.

1.2 Purpose of the Study

All of the new trends mentioned above deserve careful research with plenty many sub-research topics to be searched and questions to be answered. However, the main purpose of this study is to find out whether single-player computer games have a positive effect on learning a new set of vocabulary, and the researcher comes up with two questions at this point to be answered.

Literature review is designed in a narrowing down process in Section 3. A general perspective is provided about Computer Assisted Learning, and then more detailed information is given about Computer Assisted Language Learning. The review finalizes with Computer Games, their popularity among people and association with learning in general and especially

vocabulary learning. In Section 4 “Method” of the study is mentioned with its research design, selection of participants, instruments and data collection procedure subtitles. The researcher puts forward his findings in the “Results” in Section 5 and his final remarks in section 6 under the “Discussions” title. In Section 7 limitations of the study are also provided to enlighten further studies.

1.3 Research Questions

- 1- Do single-player computer games increase vocabulary learning of Upper-Intermediate students?
- 2- What are the Upper-Intermediate EFL students’ ideas about the efficiency of Computer Games on learning a new set of vocabulary?

1.4 Definitions of Key Terms

There are plenty many terms in the digital world, difficult to cope with especially for the newcomers. Thus, it would be helpful to provide the definitions of some frequently used ones particularly in the computer games world, as gaming comprises a particular discourse community. It is also important to understand the distinctions between single and multi-player platforms, real-time and turn-based games, 3D versus 2D environments, and the active game environment versus a cinema scene. By this way, the terms which are clarified here will assist the reader in contextualizing the discussion to follow.

Single-player platforms: In Single-player platforms the gamer plays against the computer. They mostly involve adventure/detective themes and the gamer is provided a more individualized experience. Single-player refers to the variant of a particular game where input

from only one [player](#) is expected throughout the course of the gaming session. A "single player game" usually implies a game that can only be played by one person, while "single player mode" usually refers to a portion of a [multiplayer](#) game that can only be played by one player.

First-person shooters: First-person shooters are so-called because players are put into the perspective of the principal protagonist in the game. Traditionally, players always see from the point of view of that protagonist. The term derives from the fields of [grammar](#) and [linguistics](#), where the '[first person](#)' describes pronouns which speakers use to refer to themselves ('I', 'me,' etc.), or verb forms which speakers use to describe their own actions ('I am,' 'I go,' etc.). Similarly, in the field of [literature](#), [first-person narrative](#) describes a text in which the narrator is also a character within the story, and frequently refers to themselves and their own actions.

The majority of early computer games were single player. Two-player games appeared with the first [personal computers](#), and 1978 introduced the first multiplayer games, known as [MUDs](#). The early 1990s introduced many games which utilized [local area networks](#) and [null modems](#) for multiplayer mode. "[Doom](#)" is a notable example of one such game. Popular modern single player games are typically [first-person shooters](#) (FPS), internet [Flash games](#), and games for the [mobile phone](#). The major selling points of larger single-player games are interesting storylines, impressive graphics, and realistic non-player characters and opponents. Notable examples include the "[Half-Life](#)" and "[Doom](#)" series. Certain game genres are inherently oriented towards single player in their design. Such genres include [puzzle games](#), such as "[Tetris](#)", and plot-based [role-playing games](#) (RPGs).

Multi-player platforms: In Multi-player platforms gamers compete against one another in networked environment. Multi-player games usually involve combat themes and the gamers

are offered a social interaction experience. In addition, Multi-players often provide cooperation between groups of gamers.

Real-time facility: Real-time is related with movement in the game since it particularly involves combat situations. The gamer acts with an immediate "real-time- reciprocal action" in the game world. He is not interrupted while progressing in the game to conduct battles and gives a better feeling of immersion.

Turn-based play: Turn-based play, by contrast, suspends continuous action in the game world in order to allow a gamer to better strategize a plan of attack. This works much like a board game where a player waits for his opponent to make his move. During normal active gameplay, the gamer has control of the action in the game world. She controls the movement of her character(s) and has the ability to manipulate objects in the game environment and to interact with other characters as well. The game world takes up the entire space of the computer screen, but the game character's statistical information and play options are generally also displayed somewhere on the screen, so that the gamer can monitor her character's condition. Various other game options may also be displayed somewhere on the screen, such as maps, character representations, building options, etc. Having quick access to game options during active gameplay helps keep the player more immersed in the game.

In a cinema scene the game takes control of the action, automatically shifting the screen to letterbox format, and running a movie clip that typically illustrates a pivotal piece of the story and/or provides needed information to move the narrative forward. Cinema_scenes are highly stylized and generally aim to create the feeling that the viewer is watching a cinema-quality presentation.

2D: 2D essentially works like a flat map on which the character moves. The greatest advantage of 2D over 3D is that it is generally easier to control one's character in 2D.

3D: 3D creates the depth perception of dimensional space and allows a player's character to view the game environment from almost any angle, to see above, below and around their character. It generally attempts to present a more realistic environment. There is argument over which design better maintains the feeling of immersion because although 3D often looks more realistic, the difficulty of controlling one's character in the game can create a sense of frustration which detracts from the feeling of being lost in the game.

Graphics: According to Howland's (2002) article on game design the first thing the gamer notices when he begins a computer game are the graphics. Graphics are the visual elements of the game world: anything the player sees within the game, including backdrops, objects, character images and full-motion cinema scenes.

Colour range, surface textures, and shadows: These features help to improve graphic quality and give the gamer a greater feeling of depth in the game world. Graphics therefore play a substantial role in whether the game feels realistic to the gamer.

Sound: It is generally the second thing that the gamer notices and it also helps to create and maintain the feeling of a realistic environment. In fact, Howland suggests that while graphics will draw you in to a scene, the sound going on in the background will create a reality in the player's mind that can never be done with graphics alone. Once the player begins to operate within the game world, gameplay becomes an important feature in the success of the game.

Gameplay: It involves the complex interactions of the game's design features which render the game fun to play and also give the player the feeling of immersion.

Immersiveness: It is the game's ability not only to capture and hold the gamer's attention, but to draw her into the game environment and give her the feeling of being fully absorbed in the story world. Directly connected to gameplay and immersiveness is the effectiveness of a game's user interface.

Interface: It is a key component of a "good" computer game but one whose definition is complex and somewhat elusive. In short having a good interface means that when the gamer wants to perform an action in the game world, the keyboard and mouse controls that she uses to accomplish this are relatively uncomplicated. Some games for instance, use a simple point and click- interface, meaning that wherever the gamer clicks on the screen, her character moves there. Other games use a combination of keyboard and mouse actions to perform tasks in the game world. Most 2D games use a "point and click" interface, hence the greater ease in controlling the character. A well developed interface helps sustain the feeling of being immersed in the game world. The total feeling of immersiveness is largely dependent on the quality of graphics, sound, interface and gameplay, and on the ability of these features to function together effectively in the game world-yet immersiveness in many PC games is also inseparably connected to story.

Gaming: In gaming, story works to provide context for the game. Story in gaming functions much like Story elsewhere. It includes character representation, background or framing of the narrative, and all of the information obtained by the gamer during gameplay which advances the narrative. It is the dynamic combination and interaction of graphics, sound, gameplay,

interface and story that create a successful game and produce the feeling of immersion in the text.

1.5 Significance of the Study

Computer Assisted Learning (CAL) has recently gained great popularity in education not only because of the endless opportunities it provides but also previous learning and teaching methodologies and approaches are renewed, and are provided new dimensions by its adaptation into education. It provides powerful learning environments not available through other means.

In terms of the advantages of technology, CAL provides a great number of benefits for educators. It increases motivation in learning environments. The Internet's growth and its impact on learners have been phenomenal and accessing the Web is the norm in our daily lives. The Youth use the Internet to support their school activities in many ways. New communication technology is effective in encouraging interaction between the student and the instructor and improving learning efficiency.

Thus, educators should make use of innovations in technology as much as they could, because as Lave and Wenger mentioned, learning and teaching is now considered as an activity which increases student membership among communities of learners that extend beyond the classroom rather than as a decontextualised classroom activity. And this can be achieved only by the adaptation of the Internet, e-learning, blended teaching or computer games as subtitles of CAL. This study mainly aimed to find out a positive effect of single-player computer games on vocabulary learning, so that it could form a basis for its implementation into school

curriculum at a certain rate in further studies. The literature review of this study revealed researches on CAL, CALL and educational computer games, which aimed also to enlighten educators about the applications of new technological systems at educational institutes.

1.6 Limitations of the Study

“No proposed research project is without limitations”

(Marshall & Rossman, 1999).

This study mainly focuses on vocabulary learning via computer games. Although it doesn't end the discussions on whether computer games have a positive effect on learning a new set of vocabulary or not, it can be a resource for the studies within this scope.

It is obvious that the aforementioned study should be reinforced with further several researches which cover the subject from different perspectives, so that the suspicion clouds over the subject disappear. Studies with deeper scopes should be done in other universities.

A further study should be done about whether they might and should be used for educational purposes. In such a study, topics such as using computer games as an educational tool and implementing them into school curriculum might be questioned. Related to this, another sub-study should be held to research the components of a good educational computer game, even for different lessons according to the needs of Turkish students. At this point, educators' and students' ideas also might be surveyed.

In this study, “questionnaires and pre and post-tests” were used as research techniques. Other research techniques such as “long-term observation” and “mutual debate” may be used to support this study and understand the underlying causes of using PC games excessively among

university students. Due to the time constraints, the researcher couldn't apply these triple research techniques.

LITERATURE REVIEW

Literature review is designed in a narrowing down process in Section 3. A general perspective is provided about Computer Assisted Learning, and then more detailed information is given about Computer Assisted Language Learning. The review finalizes with Computer Games, their popularity among people and association with learning in general and especially vocabulary learning.

Before focusing on computer games, some background information about the other two trends will be provided, which would form basis to the importance of PC games in Second Language Learning and also would be beneficial as referential proofs.

2.1. Computer Assisted Learning - CAL

Although CAL has become extremely popular recently, it is not something totally new, it has been used in educational arena for a long time. For example, computer technology has been harnessed for education in UK universities ever since the first computers for research were installed at 10 selected sites in 1957. Related to this, several outcomes occurred in UK education system such as, real costs have decreased dramatically; on the contrary processing power has increased. Network and communications infrastructure has proliferated and information has become unimaginably accessible through the Internet and the World Wide Web (White, 2007).

Another version of computer technology virtual reality (VR) which describes a set of technologies that allow users to explore and experience 3-dimensional computer-generated

"worlds" or "environments" has also been used for a while. These virtual environments can contain representations of real or imaginary objects on every scale from modeling of molecular structures to buildings and scenery of a virtual city (Cobb, 2007). Potential use in education was first considered in the early 1990s, when it was suggested that VR technology could provide powerful learning environments not available through other means. As it can be understood from the aforementioned examples computer technology has been in usage and progress for educational purposes for an appreciated time period. It has only gained acceleration by the help of the innovations in the past few years.

Plenty of schools, institutions and universities have started to apply every aspect of technological developments by making use the most out of them. According to the [Report on State Virtual Schools](#) by Southern Regional Education Board (SREB), nearly all the southern states have a state-sponsored virtual school, and the remaining states are either planning or beginning initial implementation. By 2000, several SREB states, including Florida, Kentucky, Louisiana, and West Virginia, had implemented state-sponsored virtual schools. The total number of middle grades and high school students enrolled in state virtual schools throughout the region has increased steadily each year. Student enrollment in state virtual schools in academic year 2006-2007 rose from the previous year in nearly every participating SREB state. This "Report on SREB State Virtual Schools," August 2007, is the third year that the Educational Technology Cooperative has surveyed and collected detailed information about the status of state virtual schools in SREB states. It reflects states' increasing use of the Web as an effective alternative to the traditional classroom for meeting students' academic needs, regardless of where they reside in their state.

[Evans & Gibbons](#) (2007) conducted a study to determine whether the addition of interactivity to a computer-based learning package enhances the learning process. A sample of 33 undergraduates on a Business and Management degree used a multimedia system to learn about the operation of a bicycle pump. The system consisted of a labelled diagram of the pump, followed by a description of twelve stages in its operation. The sample was randomly divided into two groups who used either an interactive (I) or a non-interactive (NI) version involving both images and text. The I system differed from the NI system by the incorporation of control of pace, self-assessment questions and an interactive simulation. Students then undertook two different types of tests to assess their learning: one designed to evaluate their memory by recalling facts from the lesson, and another designed to assess their understanding through solving novel diagnostic problems. Students using the I system outperformed those using the NI system in the problem-solving test, and needed less time to complete both memory and problem-solving tests. This result is consistent with the hypothesis that interactive systems facilitate deep learning by actively engaging the learner in the learning process. This suggests that educational designers who seek to foster deep learning should adopt the incorporation of interactivity as a design principle.

In terms of the advantages of technology, CAL provides a great number of benefits for educators. Firstly, CAL increases motivation in learning environments. According to Rau, et al (2007) when combined with Internet communication media, it can significantly increase student extrinsic motivation without causing higher pressure ([Rau, Gao, & Wu](#), 2007). They claim that motivation and pressure are considered two factors impacting vocational senior high school student learning. New communication technology is effective in encouraging interaction between the student and the instructor and improving learning efficiency.

They justify their hypothesis with a research in which they observed firstly the impact of using individual communication technologies--namely Short Message Service (SMS), email, and online forum--on student learning motivation, pressure, and performance, based on a comparative investigation of 176 students. Then the impacts of using combination of mobile and Internet communication technology--SMS + email, SMS + online forum--were examined with another experiment of 45 students. The result showed that instant messaging helps bonding the two roles--student and instructor--in the instruction process effectively.

Secondly, teachers themselves make use of CAL as well. A research exploring the ways in which information communication technologies (ICTs) could improve access to, and the quality of, teacher education in the global south showed that when teachers were given sustained training, support and access to laptop and handheld computers, they found the handheld and laptop computers equally useful, both as tools for their own professional development and as tools for supporting classroom practices (Power & Thomas, 2007).

Thirdly, the Internet's growth and its impact on learners have been phenomenal and accessing the Web is the norm in our daily lives. Youths use the Internet to support their school activities in many ways. The National Science Foundation in the USA supported a qualitative research by [Hiemstra & Poley](#) (2007), a project that was designed to better understand the Internet's impact. It involved extensive interviews with thirty-four rural youths in two states who had broadband Internet access via satellite transmissions. At the end of the research it was observed that subjects rapidly gained skills through Web use to support their learning.

2.1.2. Computer Assisted Learning in Connection with Language Learning Theories

According to Gestalt view individuals mostly learn their own perceptions of environmental events. In the process of learning, they develop memories and our memories set up expectancies and stereotypes that affect their way of perceiving environmental events. Morgan stated that these learned perceptual templates are greatly related to stimulus input and they may facilitate and retard learning (Morgan, Judith & Edward, 1998). CAL increases the amount of stimulus input providing students social context simulations even within the walls of a class. As Lave and Wenger mentioned, learning and teaching is now considered as an activity which increases student membership among communities of learners that extend beyond the classroom rather than as a decontextualised classroom activity.

From cognitive theory point of view, the cognitive information processing theorists pointed out that information needs to be meaningful in order to be learned and the imagery usage is important with respect to encoding and remembering (Morgan, et al. 1998). Cognitive scientists recommend schema activators (figures, graphs and mnemonics) to be used to direct encoding and facilitate remembering. The deeper we process information, the easier we recall.

According to Vygotsky (1978), solving a psychological problem (to remember, compare something, report, choose) include language; various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes; diagrams; maps; and mechanical drawings; all sorts of conventional signs which are found in computer-assisted learning. Such cognitive tools which have a higher potential to foster meaningful learning (Jonassen, 2000) assist users to accomplish cognitive tasks.

In Jean Piaget's (1959) constructivist theory, learning is seen as knowledge constructions by an active learner through action, reflection and communication in a social context. Such constructivist approaches aim to create environments in which learners actively construct their own knowledge, rather than following the teacher's interpretation of the world (Jonassen, 2000). Computer-based cognitive tools are tools that can help learners build their knowledge structures by constructing and manipulating knowledge representations.

A study was held between the University of Limerick in Ireland, De Montfort University in England and Sacred Heart University in the United States of America focusing on the advantages and problems of using Information Communication Technologies (ICT) to support a blended learning approach to teach a multi-institutional Professional Issues/Computer Ethics course (Jefferies, Grodzinsky & Griffin, 2003). They used a commercially available collaborative learning management tool, Blackboard system which is a set of Web-based tools designed for the creation and management of a virtual learning environment. Here students can share files and use communication tools to contact other students and the lecturer either synchronously or asynchronously.

The authors created virtual groups comprised of six students in total, each of which was provided with their own discussion area within the Blackboard system. Two members from each group from each of the institutions were selected to facilitate both face to face and computer-assisted collaboration. Grouping together students from each of the three countries meant that they would all have the opportunity to gain first-hand experience of the different ethnical viewpoints.

The study started in the spring term of 2002 with seven fairly balanced groups. A student cohort of 41 and three instructors used the Blackboard system over a 9-week period. The authors made the assignment a scenario-based project that required students to discuss and evaluate the ethical issues related to a particular dilemma created through the use of ICT so that they could integrate use of the Blackboard system into the face to face context. Each group would choose a scenario depicting an ethical dilemma related to the use of ICT from a given selection. They had to conduct an analysis of this scenario and present a collaborative report based on their research and threaded discussions. The three instructors supplemented the teaching presence by reading the discussion boards and offering expertise when it was needed by sending e-mails or taking up issues in the face to face situation.

Statistics were gathered using the Course Statistics tool. It was clearly seen in *Table 1* that all tools in the Group Pages were used, but the group discussion boards were the most popular one. These were used to facilitate introductions among the group members, organise the project, distribute tasks, post the research and create timelines. Students used this page also for threaded discussions about the scenario itself.

(Table 1)

Statistics gathered using the Course Statistics tool

Area name	Hits	Percentage
Group Pages	3709	15.61
Group discussion Board	16634	70.09
File exchange	502	2.11
E-mail	159	0.66

After the coursework reports had been submitted, the authors distributed a survey about the use of Blackboard system in the International Collaboration to discover the strengths and weaknesses of the tool and the online collaboration from the participants' point of view. There were 22 respondents to the survey who differed in length of time using the system. The majority of the participants found that Blackboard was most useful when they wanted to initiate or contribute to an ongoing discussion. They felt that the online asynchronous nature of the system was very important in all phases, but especially in the division of the work. The study has shown that moral dilemmas in computer ethics encourage group discussion, that team work encourages social facilitation, better learning and higher cognitive skills (Hiltz, 1994; Saloman & Globerson, 1989). The use of this technology opened up even more opportunities for students to engage with students in other countries, thereby allowing them to gain first-hand experience of the issues raised in a global context.

It is believed that CAL may increase the acquisition of knowledge by solving problems deriving from individual differences among students. According to Carroll's (1963) model of mastery learning, an individual should be able to reach mastery learning if sufficient time to learn a task is allowed and instructional condition is improved. However, if all the students are limited to learning a lesson in a certain amount of time, then normally high, average, low achievement scores will be observed. To help less able learners catch up with the desired mastery, extra time must be provided for both learners and instructors. Electronic technologies open up new possibilities for knowledge construction venues and for making thinking visible (Caviglioli & Harris, 2000). Individual mail, online forums, threaded discussions, and communal databases give the opportunity to surpass time limits, space constraints that set limits on availability. This is a written record of the dialogue and helps exchanging ideas at any time and by anyone who wants to join the discussion (Orhun & Kommers, 2002).

A study was held to investigate the differences in sense of community between individuals of different cognitive styles and also the effects of gender differences in sense of community in a group of students pursuing courses in a blended learning environment (Graff, 2003). Sixty participants (46 males, 14 females) took part in the study, with a mean age of 32.93 years. All of them were enrolled on a business study online course, yet they also joined in regular face-to-face interaction with fellow students.

Cognitive Styles Index – CSI (Allison & Hayes, 1996) and Classroom Community Index – CCI (Rovai, 2002) were used as instruments. The CSI is a self-report designed to measure the analyst-intuitive dimension of cognitive style. Intuitive defines an individual whose judgements are based on feelings and who adopts a global approach to processing information and analytic defines an individual whose judgements are based on reason and who focuses on specific detail when processing information. The CSI contains 38 statements with true / false choices. The CCI is also a self-report test with 40 items and a five-point Likert-scale ranging from strongly agree to strongly disagree.

Participants were sent both of the tests by e-mail, which contained a hyperlink to a Web form. They answered the tests on the form and submitted back to the researchers. Cognitive styles were categorised according to three style types related to the scores from the CSI: Intuitives were individuals scoring ≤ 29 , intermediates scored between 30 and 40 and analysts scored ≥ 41 . A one-way multivariate analysis of variance was applied for the CCI. Low scores reflected a weak sense of community and high scores reflected a strong one.

As it seen in *Table 2* Differences were found between intuitives and intermediates for the overall measurement of classroom community. Intuitives seek for company and closeness with

others, so this is why they would be more likely to report lower scores for sense of community than analysts or intermediates in the same environment. From spirit point of view which is a feeling of belonging to and acceptance of a group identity, intuitives again would report lower feelings of spirit in the same community than the others.

The results in *table 3* also reveal gender differences. Females scored higher than males due to the fact that the communication patterns of females in learning environment is one of seeking relations and connectedness, whereas male patterns are more autonomous and independent. These results indicate that individual differences should be taken into consideration in computer-assisted learning.

(Table 2)

Differences Between Intuitives and Intermediates

	Intuitive	Intermediate	Analyst
Spirit	23.75	25.39	19.39
Trust	22.50	23.11	21.67
Interaction	20.69	20.06	18.44
Learning	22.00	22.61	21.89
Total	88.94	91.17	81.39

(Table 3)

Gender Differences

	Male	Female
Spirit	23.03	22.29
Trust	21.88	23.39
Interaction	18.31	21.14
Learning	22.28	22.25
Total	88.50	89.59

2.2. Computer Assisted Language Learning – CALL

CALL gained momentum especially at the beginning of 19th century nearly in every aspect of language learning. It has been widely used mostly in skill lessons due to some reasons such as; novelty, flexible description, innovative formats, interesting graphics, amazing speed, easy text manipulation. As Orhun and Kommers (2002) exemplified, Hypertext and Hypermedia elements are two of these. Hypertext refers to a nonsequential organization of text in which related items of information are interconnected. The reader moves from one information item to another choosing links in a browser program. Hypermedia is the extension of hypertext to include multimedia - sound, graphics, and video. It is possible to consider concept maps as hypermedia can aid learners by providing spatial orientation.

2.2.1 CALL from Skills Point of View

In writing skill, word processing programs encourage students to write their own stories. They can create illustrated classroom newspapers and similar projects. As the latest animation programs (audio and visual) enabled listening and reading lessons more enjoyable and effective, electronic communication services through connection to a computer such as electronic mail and computer conferencing also improve speaking and writing skills. Computer conferencing can take place with only one person communicating at a time (called asynchronous conferencing) or with several people communicating at the same time (called synchronous conferencing) (Jonassen, 2000).

Grammar teaching is as popular as skills, one can find hundreds of institutional or personal web-sites providing loads of material to both teachers and students. There are also plenty software programs offering interactive activities to be applied in classroom environment or at home as follow-up.

In literature authors play an important role to develop students' attitude towards reading. They must present well-drawn characters, enjoying plots, descriptions that include mental images (Hayes, 1991). Stories can be supported by long-playing records, tapes and compact discs. Stories that are read dramatically with music and other accompanying sound effects can encourage future reading and discussion (Andrews, 2001).

Teachers can also use comics for reading instruction by capitalizing on their colourful graphic representation. In her article McVicker (2007) reports on strategies for developing visual literacy skills by using comic strips. She claims that comic strips provide a quick, concise way to teach and apply reading skills for practice or remediation and suggests using a comic strip comprehension game on an educational website as well as strips from the daily paper.

In this era, skimming through any kind of text/extract quickly and focusing on the core points of information from amongst the overloaded data is a vital talent. One can train himself for this kind of literacy by reading on the Internet. The question is in which ways computer usage is connected with literacy needed in everyday life, which can be called functional literacy. [Aro & Olkinuora](#) (2007) searched for the answer of this question in their research in which they used Finnish data from the Second International Adult Literacy Survey (SIALS) that was carried out in 1998. Three domains were examined in SIALS--prose literacy, document literacy and quantitative literacy. Real-life texts, figures and tables were used in the tests.

According to the results, there were more good readers among those who regularly used computers for searching for information and reading on the internet. While the youngest scored highest in literacy, the use of computers for information seeking purposes was also connected to better literacy in the older age groups. The lowest educated appeared to benefit the most from the use of computers.

In a project called “The Talkback Project”, a blog software was used to involve eighth-grade language arts students, preservice teachers, and parents in online discussion of young adult novels and their personal connections with them. Shelbie (2007), who is the co-director and was nominated for middle level representative-at-large of the executive committee of the National Council of Teachers of English, created a blog for the aforementioned Internet users to provide them an environment to share their critics on book reviews. She realised that classroom blogging provides positive opportunities for students to develop their digital fluency, strengthen traditional literacy skills, and apply real-life 21st-century skills in a safe and monitored environment.

Film scripts can be also used to motivate young learners. They know the visual well and respond to it immediately. This can make them interested in printed materials as well. Video discs present information through combinations of still shots and action sequences with stereo sounds. The visual quality is much superior to the video tapes and cassettes. Images are clearer and more precise to present the story in lively, creative way.

A field study was carried out with learners who used a grammar checker in real writing tasks in an advanced course at a Swedish university by [Knutsson, Pargman, Eklundh & Westlund](#) (2007). The objective of the study was to investigate how students made use of the grammar

checker in their writing while learning Swedish as a second language. Sixteen students with different linguistic and cultural backgrounds participated in the study. A judgment procedure was conducted by the learners on the alarms from the grammar checker. The students' texts were also collected in two versions; a version written before the session with the grammar checker, and a version after the session. The results showed that providing the student with feedback on different aspects of their target language use, and facilitating the processes of language exploration and reflection are important processes to be supported in second-language learning environments.

[Coryell](#) & [Chlup](#) (2007) are interested in the case of adult English language instruction, also commonly referred to as English as a Second Language (ESL) or English Speakers of Other Languages (ESOL), claiming that blending e-learning components into the classroom environment supports English acquisition.

2.2.2 Effects of CALL on Different Learners

CALL can also be effective with problematic learners as it solves problems deriving from individual differences among students in the acquisition of knowledge. Underachieving learners are unable to read a text without a help. They get lost in details, become more dependent to teachers, lack of confidence in their abilities to function independently and need to learn how to guide their own reading to achieve good comprehension (Hayes, 1991). Some software programs in CALL may be helpful for them, because they include step-by-step pre and post activities with a great guidance. Mapping reading technique can be effectively used in computer assisted reading. In mapping the main idea (usually visual images) is usually placed in the centre, with relationships to other concepts represented virtually.

Slow learners (with low IQ below 70) – need realistic, concrete skill presentation. According to Hayes (1991) teachers should use manipulation as templates, models and rely to involve students' senses in learning. Active, tactile learning is encouraged with puppets; learning is transferred to real-life contexts. They have difficulties in remembering what is learned, so over-learning (repeating practice in interesting ways) is a key strategy (Cuban, 2001). All of these techniques and materials can be widely found in CALL, furthermore with no time and space limitations. Cooperative learning, in which they are grouped for interactive tasks, eases the problem. Chat, forum and discussion interfaces, sending e-mails or joining computer conferences will also be helpful.

CALL is effective especially enriching the comprehension of students with auditory impairments, by giving visual emphasis to key points, associating words with images, because vivid visual images can enhance retention. Hayes also offers teachers to encourage student creativity in devising virtual representations of important material. Students remember the material not only because they have a social representation in mind but also spend time and effort thinking about the relationships expressed in order to be able to portray them in a map. It can help readers visualize and understand relationships that otherwise are too abstract to be grasped immediately (Birminham & Davies, 2002).

Cobb (2007) claims that VR can be used as a tool for communication, as a medium through which individuals express ideas, and for learning about communication, through guided training and rehearsal in simulated social scenarios. He presents 4 research projects conducted by the Virtual Reality Applications Research Team and associated colleagues in special needs education since 1991. In these projects VR proved to support training for individuals with

learning needs and communication difficulties in preparation for more independence in their everyday activities and communications in the community.

Naevdal (2007) investigated the relation between home computer use and performance in English at school. His sample consists of 656 tenth-class students (age 15-16) in upper-secondary schools in Bergen, Norway. Data collection took place in the spring of 2002 and was administrated by the county education office. The performance in English on a significant level was evaluated with the total time spent in front of the PC-screen. Both boys and girls who seldom used home computers achieved low scores in English. However, those students who spent two or more hours per day in front of the screen performed very well in English. Moreover, youths who were classified as poor learners benefited more from using home computers than those who were more competent learners.

2.3. Computer Games

Before narrowing down on the main subject of this study, it will be better to gain some information on the types of computer games as they will provide a general perspective about the computer games world, and related to this, it will be much easier to comprehend some critical points.

2.3.1. Computer Game Types

Apart from basic definitions, the necessity of providing preliminary information about computer game types in order to broaden your perspectives to get an overall picture of PC

games, and related to this to put forward the reasons in choosing the most suitable game type for this specific research is significant.

While there are several variations, virtually all game narratives work in similar ways and contain similar architectural parameters. First, there must be a protagonist - the gamer's character, or the gamer's stand-in within the story world. The protagonist is then usually placed within a story frame where elements of background unfold and the crisis which the character must overcome is at least alluded to if not detailed. Once the gamer has been presented with pieces of the story, he begins to explore the game (Sexton, 2002). The goal of the gamer is simply to try to discover information, solve puzzles, uncover clues, kill, evade or escape the bad guys; and try not to get killed. The fundamental structure of all games is to complete a series of minor objectives. Whether it is finding a sorcerer's wand, sacking a strategic military point, talking to a farmer who has important information, or taking out a villain of moderate importance, completing these minor objectives is generally what allows the game narrative to progress and allows the gamer access to more of the game narrative. These minor objectives also continuously lead toward a climactic grand objective, the completion of which typically wins the game and provides resolution to the Story.

The objectives of the game attract the attention of the gamer. Some PC games are driven by the story and a sense of quest (*Sanatorium, The Longest Journey*); some are driven by action-adventure and killing (*Quake, Unreal Tournament*); many attempt to combine these two (*Final Fantasy, Diablo, Resident Evil, Max Payne, Tomb Raider*) and still others are driven by a combination of strategy and combat (*StarCraft, Ages of Empire*).

2.3.1.1. Adventure

Adventure games generally contain substantial features of narrative plot and narrative events. The gamer is given a predetermined third person character - the narrative equivalent of the protagonist, whom she controls in the game environment-and a framing or background story for that character, which constitutes the narrative world. In the most recent adventure games, the character will generally have an identifiable personality type that is perceived through speech, actions and appearance. The goal of an adventure game is to simulate an adventure-detective experience and typically involves having the game character explore various dungeons, tombs, villages, sewers, subways and other labyrinthine and/or enclosed spaces in order to find clues for solving a mystery, acquiring a highly-prized object, saving the world, or some other ultimate goal." Adventure games commonly include elements of puzzle solving, and a great deal of interaction with other NPCS (non-player characters) in order for the gamer to gain needed information that will further her investigation or advance the narrative plot. The adventure game narrative typically becomes quite complex as the game progresses. Adventure games contain little or no fighting, but often contain elements of fantasy and alternate worlds. They are designed on a single-player platform.

2.3.1.2. 3D Shooter

In the shooter genre, the gamer navigates through a 3D space, "shooting" scores of minor enemies until she finally tracks down and destroys their evil leader. Enemy targets shoot back at the gamer's character and the gamer's character may be killed if he or she takes too many hits. The protagonist's character is rarely developed beyond a general description such as "you are a military operative," "you are a new recruit," or something similar._The narrative is

typically very superficial and represents only the most basic narrative frame for the action to take place in. In shooters, the emphasis is on simulated violence. The important characteristics of a shooter game are multiple weapon choices and variations in enemy targets. There are two types of 3D Shooters.

Third person shooter games are interesting involving narrative with a degree of literary substance. They have a modern day action-oriented shooter game into a story filled with motifs and themes of traditional noir cinema. Conventions of noir fiction inform the gaming narrative of Max- Payne in a way that locates the viewer/player within the pre-existing paradigm of films noir, yet incorporates a dimension of interaction and participation unique to game narratives alone.

While a third person shooter" provides a third person character whom the gamer controls through game space, as in adventure games, a first person shooter, typically referred to as an FPS, attempts to make the gamer feel as though she, herself, occupies space in the three dimensional game world. This is achieved by camera point of view. The character is not seen; rather, the camera's view functions as the eyes of the player in the game world. Often what the gamer sees as a representation of her special presence is a disembodied hand holding a gun or simply a hovering gun at the bottom of the screen, imagined to be a metaphorical extension of the gamer's hand.

2.3.1.3. Survival Horror

Survival Horror is a popular hybrid of the Shooter and Adventure genres. In survival horror, the gamer controls a third person character in 3D space, yet in this sub-category there is a

much greater emphasis on story. Cyberpunk concerns about bio-engineering and government conspiracy are common narrative plots, as are the horror of the preternatural and the occult. Target enemies usually appear in the form of monsters, demons, vampires, zombies, mummies or some other stock horror character. Resident Evil and Alone in the dark are good examples of survival horror. Survival horror games are also some of the most visually graphic computer games in their depiction of animated violence, blood and gore.

2.3.1.4. Real-Time Strategies

RTS games generally attempt to stimulate a military campaign. The gamer typically has control of an army of some sort, with military units and special operatives, and wages war on an opposing army. The campaign involves the construction and maintenance of a military base and building, training and deploying military units in order to wage various minor battles and eventually win the war. RTS games generally support a single player platform, but are often specifically designed to be played in multi-player forums as well. Some RTSs contain virtually no story, such as “*Age of Empires*” which pits opposing armies of the ancient cultures against each other and simulates war to see who will rule the world. Other RTSs maintain a fairly well developed background story with most of the elements of narrative structure inducing rising action, tension, conflict, complication, climax and resolution.

2.3.1.5. Role Playing Games

CRPGs are originally derived from traditional [role-playing games](#), especially “[Dungeons & Dragons](#),” and use both the settings and game mechanics found in such games. The stories featured usually involve a group of characters (a *party*) who have joined forces in order to

accomplish a mission or "[quest](#)" (is generally a [task](#) or series of tasks, which a [player](#) or group of players may complete in order to gain a reward). Along the way, the adventurers must face a great number of challenges and enemies (usually monsters inspired by [fantasy](#), and, to a lesser extent, [science fiction](#) and classic [mythology](#)). Characters have a variety of [attributes](#) such as "[hit points](#)". These attributes are traditionally displayed to the player on a "*status screen*" as a numeric value, instead of a simpler abstract graphical representation, such as the bars and meters favored by video games in general.

The most defining characteristic of an RPG (Role Playing Game) is the gamer's ability to choose his own character from a limited range of basic "stock" characters and then develop that character in unique ways. Using and developing skills in combat simulations is what enables the gamer to derive a sense of pleasure and sensation from role playing PC games. RPGS can be designed for real-time play or may be turn-based (turn-based games typically allow for a more Strategic plan of attack, but also tend to draw the player away from the immersiveness of the game). Many RPGs are essentially a complex virtual manifestation. The gamer controls a character or group of characters in a fantasy world where wizards, sorcerer, mages. Knights, dwarves and mythical monsters battle for control of the universe using magic skills and archaic weaponry. Other RPGs contain a sci-fi or cyberpunk story game, but in virtually all RPGs, gaining experience points through combat in order to reach higher skill levels is one of the most important components of gameplay. Understanding genetic parameters in gaming helps to explain both generic limitations and generic explanation within the game world. Each game and each game's narrative is limited by the elements of genre it must adhere to.

One gets amazed with the variety of computer games in the market. Especially the new as advances in technology allowed and triggered plenty of companies to create more and more computer games for the taste of any age. It is extremely normal in a world of demand and

supply. So, what makes computer games that much popular? Why do people spend hours in front of that screen sitting down alone and getting engrossed in a world unlike your own although it causes a lot of health problems, such as backache or poor eyesight and also become an unsociable person instead of spending time with friends?

2.3.2. The Reasons for the Popularity of Computer Games

“In truth, I had almost no interest in PC gaming until about three years ago. Although I lived with an avid gamer, I generally spurned the idea of wasting a perfectly good evening sitting in front of a computer playing games when I could be absorbed in a novel or engaged in a good movie. But from the other room, I would hear voices - characters engaged in dialogue or a narrator recounting events of a story. Bits and pieces of story drifted on the air, and like some mysterious and irresistible aroma, the smell of an alluring story pulled me in. I watched, intrigued as human-like characters interacted in a surprisingly realistic story world. Before long, I found myself in front of the computer, lost in the labyrinth of the game. It wasn't the idea of playing a game that drew me in at first - it was the beckoning of an interesting story. Once I started to play, I realized what a unique pleasure it was to be part of the story, helping to construct the text through gameplay.” (Sexton, 2002)

Although I have been conducting a research on computer games for a long time, personally I also do not fancy with computer games a lot. This might sound awkward, however, I share the same ideas with Teresa Sexton (2002) due to the fact that reading an unputdownable novel under a tree or watching a romantic comedy on my small home theatre lying on the

comfortable sofa is far more interesting and enjoyable for me than wasting – not spending - hours in front of a screen playing computer games.

The main reason for my interest with computer games is that in intervals I happened to meet with people claiming that they had improved their vocabulary input by the help of computer games. Furthermore, despite being hopeless cases in English lessons, some of my students not only frequently have asked me the meanings of plenty words in the games they come up with to confirm whether they have comprehended them correct or not but also have shocked me by giving the direct translation of many others which I would not expect them to know. In addition to this, having done a research on CALL previously and been in the e-learning project of Yıldız Technical University, Istanbul for 3 years also triggered my attention on the effects of computer games in Second Language Learning.

Following the decision to initiate a research on computer games, it was realised that the starting point should be finding an answer to the question why they are so much popular. Depending on the interviews which had been conducted and the introspective questionnaire which had been delivered to 130 people keen on computer games, and the articles that had been gone through, the following reasons were come up with, such as general trends in preferences, types of games preferred, gender differences in computer and game use, and several propose elements of popular game play. Yet, as the research was deepened, many other factors contributing to the popularity of computer games were found.

2.3.2.1. Desire for Computer Games Despite Gender Differences

Wartella, O'keefe and Scantlin (2000) agree that content interests are different for different genders. Boys prefer violent action and sports, whereas girls adore educational, fantasy-

adventure, puzzle, spatial relation games or games based on reality and creative play (Subrahmanyam, Kraut, Greenfield, & Gross, 2000). According to a survey conducted in The National School Board Foundation (2000) among 1,735 randomly chosen households with children ages 2-17, boys and girls use the Internet differently. Boys seek entertainment, while girls are interested in communication and educational sites. They may be at different developmental levels despite their same age. Nielsen (2002) reports that boys are more annoyed by onscreen text than are girls and complain about the wordy websites. Girls may request more instruction onscreen.

Nonetheless, rather than thinking in terms of ‘boys’ and ‘girls’, the interesting features that attract the attention of all children should be focused on. Both genders play computer games in their free time only because it is fun. In the past regular cartoons like the Stone Age, Voltron or Heidi used to keep them busy, however, this two dimensional world is not attractive enough for them anymore. Especially due to new technology benefits in computer sector in which graphics, audible features and animations are more realistic, simulation and complex computer interactions are more easily programmable, these advances in gaming industry play an important role in children’s enjoyment. Amory et al. (1999) states that stimulating storylines are also vital to keep their interest high. Hanna, Ridsen, Czerwinski and Alexander (1999) found out as a result of their usability research at Microsoft that interesting activities which offer expanding complexity and provide supportive reward structures attract players’ attention.

Moreover, children die for competing and excitement and computer games provide them these. According to several writers games must include a competitive or challenging element, that the mere completion of an activity is not a game (Dempsey, Lucassen, Gilley & Rasmussen, 1993; Dempsey, Lucassen, Haynes & Casey, 1996; Malone, 1983).

Access to the Internet has increased recently. The number of Americans connecting to the Internet leapt from 3 – 80 million between 1993-1999 (Bigum, 2004). Miller et al. (2001) describes the potential of the Internet, including the blending of educational content with game-like features. Many websites replicate game activities found on CD-ROMs, while also offering puzzles, stories, downloadable art and games as well as the social communication opportunities. In addition, as Internet access increases; other Internet-based activities may also increase, such as e-mail, instant messaging, and chat. New media abilities of the Internet impact children through interactivity, convergence of existing technologies in new ways, and ubiquity of the technology in all aspects of children's lives (Montgomery, 2000).

2.3.2.2. Simulations

Computer games are popular also among the adults not only because of the same factors mentioned in the previous section but also due to a few more reasons. First of all, human beings are bored with issues they face with in everyday life. They feed some of the basic human desires, such as the passion to be powerful, to control the environment and even life itself, in other words the desire to be omniscient by overseeing a whole environment within the game plot adorned with high technology simulation programmes. Man, by nature, has the desire to have control over something since life is so unpredictable as it is. In order to do this we, as humans, must create situations where we are in charge, where we call the shots, and where we have full control over what happens when and to whom. Computer games provide them ability and possibility to satisfy their passion to oversee their environment. Simulations are meant to be experienced as real, believed to be real, and finally seemingly known to be real. The simulation provided by the electronic age blends into a curiously hyperreal ontology.

One cannot figure out how an evil wizard, a few druids, dragons and a cast of dozens turn a database into a society.

2.3.2.2.1. The Godlike Simulations

These themes have firstly been seen in cinema business. The plot of the movie “The Truman Show”, for example, depicts the completely conditioned and scripted life of Truman Burbank who at birth was adopted by a TV channel and whose world is actually a worldwide television show which is broadcast twenty-four hours a day that Christof, the creator and director of the television show, has staged for the entertainment of the vast planetary audience. Truman thinks that his every manifestation and feeling is ‘real’. In order to make Truman believe in Seahaven, all the actors continually maintain the big lie of the town's reality. As with every situation where Truman comes close to waking up, Christof quickly puts him back to sleep by creating the appropriate atmosphere and conditions. We can see the elements of theology and ontology present in the film. The existence of The Truman Show in the movie by the same name is the result of humanity’s need to play God. The Truman Show is an example of what the desire to control can create. The creator of the show, Christof, spends much of his life trying to create a complete reality out of a false world. He surrounds a man, Truman, with this world and allows him no escape. In this virtual reality, everything is controlled and directed by Christof, even the weather. This control elevates Christof to a God-like status and Truman becomes the symbolic son on earth. What happens when the illusion loses its strength, however, threatens to bring Christof back to the level of a human and reveal the imaginary world for what it really is.

Similarly, the desire of controlling people and their perceptions appear in other works of art. *Nineteen Eighty-Four* (1984) is a political novel written by George Orwell in opposition to totalitarianism. The book depicts a dystopia in which an omnipresent state exercises total control over its subjects. (Along with Aldous Huxley's *Brave New World*, Ray Bradbury's *Fahrenheit 451*, and Yevgeny Zamyatin's *We* (and possibly Anthony Burgess' *A Clockwork Orange*), *Nineteen Eighty-Four* is among the most famous works of dystopian fiction in literature.) Similar to George Orwell's novel 1984 and movies, computer games explore the idea of humans being able to control both reality and one's perception of reality.

Among the computer games, Peter Molyneux's first popular game *Populous* (1989) put the player in the role of a god. The perspective of the player-god is a kind of third-person omniscient viewpoint, overlooking an empty ocean and looking down onto lands that he or she can create and the people that he or she will generate later in the game. The player-god has control of the environment and his or her perspective, moving smoothly around the game world without being affected physically by the world beneath him. The object of *Populous* is to create and then possess the simulated reality of the gaming world, something which most game players adore a lot. For example, one option within the game allows a player using a computer that is currently online to customize weather settings that will cause the game to seek out websites with local weather information, which are then mimicked in the game's environment. Thus, while the player plays god, the simulated environment parallels the real environment.

In Molyneux's recent god game *Black & White* (2001), gesturing with the hand, the god is able to cast spells. For example, by tracing the shape of heart with the mouse, the god heals the villagers in the game. This shows that there is a lack of distinction between the real and the

simulation. A reviewer of the game, Li C. Kuo, describes in PC Gamer, *“I loved the gesturing system, because it made me feel like I was actually performing magic”*. There also exists a creature in the game, which has personality traits, such as reacting to situations, emoting anger, sadness and happiness through daily activities. It can perform these even without the intervention on the part of player-god. There occurs a deep real connection between the player and this simulated “pet”: *“Eventually, you’ll feel a bond with your creature, almost as if he were a real pet”*.

2.3.2.2.2. The Realistic Environment Simulations

Less competitive games with the ability to create a working and functioning city like *SimCity* (1989) were also created with the same godlike perspective and abilities, but focused on the survival of the creation rather than on defeating an opponent.

Another game, *The Sims* changes the restricted plot of the more primitive forms of simulation into a more realistic environment where the Sims with its characters that populate the game world includes the acts of real life daily activities; such as eating, mowing the lawn, using the bathroom, and interacting with their neighbours. Indeed, the goals of *The Sims* are based almost on human relationship as you attempt to achieve popularity and status for your Sims as they make friends, fall in love, attempt to carry on affairs successfully and hopefully to improve their own lifestyle through gaining status in the neighbourhood. Game players feel themselves as if they have achieved some of the deeds of which they cannot do so in real life, with extra satisfaction.

Most people have a passion for American-style culture. Since several simulation games provide them this welfare state, they at least try to satisfy their desire by playing these games

despite their virtual atmosphere. Like *The Truman Show*, *The Sims* presents a voyeuristic simulation of suburban American middle-class life. But, unlike Truman, who is subject of the simulation, the player steps into the role of the creator of this show, determining the destinies of the little “*Trumans*” and also his own destiny since the player’s reality so closely parallels the simulation that the player manipulates. *The Truman Show* is a living narrative history of suburban America, but *The Sims* is a narrative history of your suburban America. The players have suddenly been given full control over how their environment looks and how people act in it. This reality can be saved to deal with later or deleted if there are too many problems in it, and ultimately restarted if it is not a satisfying “reality”. Who wouldn’t become keen on computer games under these circumstances?

2.3.2.3. The Power to Control the Narrative

The ability of the player to gain control over game narrative continues to grow as games are packaged with world-building tools. The player or others can become the central figure or figures within an environment of their own design. In addition to these world-building tools, dynamic gaming environments increase the effects that players themselves can have on a world that they choose to participate in and interact with. The high level of realistic features attract the attention of players, cause these traits decrease the distancing effect between the real life and simulation environment, showing how natural simulation is to human life. It is for sure that an electronic screen is not as friendly as the warmth of a real letter or a voice across the telephone line. However, as Sexton (2002) states, the people that create and use computers are still human. Despite the distancing effects of simulation, players still recognize the “humanness” of other players. Furthermore, creating avatars or masks for ourselves under appropriate circumstances is really nothing new to human behaviour, due to the fact that

human beings are used to dealing with artificial representations and signs in dealing with one another. Consequently, players spend a worthy amount of time playing computer games in an environment that is as real as the real.

2.3.2.4. Themes

Themes are another factor that attracts the attention of game players. They can find everything they enjoy in the two-dimensional world of television or cinema in 3-dimensional environment of computer games, furthermore in an interactive atmosphere where they can interact not only with the characters in a single-player game but also with his rivals in a multi-player online game forming parties with many other players distant. There is a wide array of themes that they can feel themselves immersed in.

2.3.2.4.1. Noir and Neo-Noir Cinema Plots

Computer games have a lot of aesthetic points from multimedia point of view. But how can one propose to address "aesthetic" aspects without referencing film and visual art, "cultural" aspects without alluding to cultural studies, or "communicative" aspects without calling upon linguistics and narrative discourse? *"Games are not a kind of cinema, or literature, but colonizing attempts from both of these fields have happened"* (Aarseth, 2001b)

The deliberate and consistent use of obvious classic film noir themes and motifs helps the developers of this game, and the gamer as well, to locate the text within a narrative genre that is readily acceptable to the general public. The dark anti-hero of noir seems to be naturally extended into the world of computer game where the gamer's character often attempts to control an uncontrollable world through violent action.

Original noir cinema made popular by films of the 40s and 50s, which sought to investigate the dark side of human nature, has left its mark irrevocably on American popular culture. A great number of people fancy films with this genre. Neo-noir, then, has shown that it makes use of classic noir style in contemporary textual spaces, like the game “*Max Payne*”, where narrative travels its own generic path as an action-adventure computer game, yet is steeped in the classical thematic and tone of traditional noir cinema. Noir stylistics, which typically involve using dramatic lighting effects and striking camera angles as well as particular motifs such as gangsters, hard-boiled detectives, fugitives and dangerous female characters, to name a few, developed during the cinematic phase of classic noir, yet have continued to cast dark nuances onto virtually all forms of narrative media, including the gaming industry. Noir cinema has contributed to a host of related narrative forms-from detective fiction to action-adventure, to horror, fantasy, and science fiction- and all of these narrative forms are used in gaming. Indeed, the majority of computer and video games utilize to varying degrees same aspect of noir fiction and/or film in the construction of their particular game’s narrative structure, which is greatly welcomed by many game players.

2.3.2.4.2. The Aesthetics of Death

Violence in video games is nothing new and is one of the most popular themes for preference of computer games, due to the fact that the millennium generation unlike Baby Boomers of 1960s – unfortunately - adore violent scenes. Even animation producers shifted their cartoon plots according to this trendy tendency although it is not approved by the parents at all.

Shooters are synonymous with fast action and body count and violence is an integral part of game play. Good shooter games have multiple weapon choices, each of which produce interesting and or comical variants of death aesthetics. This theme is mostly popular among the

adolescence. For example, the developers of the game "*Metal of Honour*" omitted the typical blood-splattering death gore from the original game in order to get a content rating that would allow it to reach a broader (younger) audience; yet within less than a week of its release, an "extra blood- patch" was created and made available online so that, once downloaded and installed, it would produce the appropriate blood spattering gore many gamers wanted. In *Max Payne*, Max is afforded the opportunity to beat several of his enemies to death with a baseball bat or a metal pipe. This defines the expression of what Nino Frank called "*the dynamism of death*" (Sexton, 2002).

Producing death with style rather than with extreme gore, as has often been the focus in other adult shooter games such as the ones mentioned earlier. Cinema shots, for example, randomly produce highly stylized slow-motion sequences in which the player's victims are launched backward, spun around or sent somersaulting through the air by the force of the bullets, grenades, Molotov cocktails or what have you. In these specialized shots, the camera view often rotates around the victim in a spinning slow-motion surrealism accentuating a type of neo-noir violence through compositional technique. These advances attract the attention of people and make them focused on games more than the noir cinema. Alternately, the player can put the game into "Bullet Time", slowing down the action to highlight the aesthetics of a death scene. These neo-noir techniques of the game world seem to echo classic films noir that "would rather move the scene cinematographically around the actor than have the actor control the scene by physical action".

Furthermore, opponents that are unseen clearly refer to nothing. That makes it forgivable and easier for the players to kill an enemy figure within the game, because villains do not carry the referential quality of "humanness" in simulated environments. As players could distinguish

between the real and the simulation through physical presence (the opponent or player next to the them as opposed to the opponent or non-player character on the screen), the distancing effect of the Internet intensifies this matter, as you don't have a fellow player next to you, also you have no sense of his physical location at all. There is a different sense of the humanity of your opponent as you stab him through the gut with a sword and feel his blood warmly trickle across your fist than there is in pressing a button to launch missiles that kill thousands of people hundreds of miles away at a location. A further example is in the movie "*The Matrix*". We know that the people in "*The Matrix*" are real in that while they exist in a simulated environment; their avatars represent real people in the real world. And if they die in the simulated environment, their bodies will shut down and die in reality. If "*The Wachowski brothers*" hadn't added a scene in which "*Morpheus*" explains that everyone in "*The Matrix*" is an enemy, the thought of "*Neo*" and "*Trinity*" killing lots of people would have been extremely disturbing (Sexton, 2002).

2.3.2.4.3. Treachery and Deceit

Another predominant theme of noir detective stories that surprisingly attract players' attention is a "fabric of betrayals". This theme lends itself easily to the type of storytelling that often goes on in action-adventure / detective games, and this storytelling style which substitutes books with the same genres and is underpinned with high technology multimedia tools is one of the reasons of preference for computer games rather than books themselves. Mafia wise-guys turn-coat and rat out each other or get bought out by rival mobsters; hookers blackmail their clients and dabble in extortion. Overshadowing all of this underhanded treachery, however, is the grand betrayal of them all – the betrayal of the American Dream. The myth of having the happy family, the good job, the shiny new car and the charming suburban house

while ignoring the world of corruption going on around is shattered. Maybe the reason why people widely play this genre of games is that they want to put an end to the issues existing in the society. Maybe they can find the strength and courage to fight against degradation only in simulated environments.

2.3.2.5. Intertextuality and Parody

Players like seeing some referential concepts about previous contexts or something they are familiar with. And no other leisure activity makes use of textual plays and post modern texts as the narratives of games do. Elements of intertextuality, parody, allusion, irony, metafiction, and self-reflexivity build a shared contextual relationship between games and prior texts, and between author and reader. Textual and generic boundaries are blurred, categories converge, and everywhere meaning is doubled or even tripled in the multi-vocal matrix of the game text. Thus, this causes game players to have more fun through the context of the games.

2.3.2.5.1. Intertextuality

One commentator says that “*Max Payne borrows back all the magic that The Matrix stole from computer games, then doubles it with moves from Chinese film directors*” (MSNBC). Actually none have stolen from another, but have borrowed and borrowed back. As Graham Allen (2000) restates “*Authors do not create their texts from their own original minds, but rather compile them from pre-existent texts.*” Familiarity is comforting. Rieber (1996) found that players prefer games with a familiar context.

This discursive intertextuality is evident in multiple voices in the game texts. For example, in Max Payne, everywhere references are being made to pop-culture texts which the game

recognizes and simultaneously incorporates into its own narrative discourse. As Umberto Eco has explained of his own writing, *"I discovered what writers have always known: books always speak of other books, and every story tells a story that has already been told."* (<http://www.lspace.org/books/analysis/christopher-bryant.html>).

2.3.2.5.2. Parody

People also adore parodies that widely exist in computer games a great deal. - In the past the term "parody" was associated with a style of imitation that ridicules, however, the contemporary post modern parody associates it with sharper and more satirical condemnation. The game narrative's intentional overuse of already campy noir language gives it an ironic, mock-heroic that deliberately pokes fun at film noir discourse.

For example, in one case in Max Payne, while trying to deactivate a ticking bomb, two thugs argue over which colour of wire they should pull (Sexton, 2002).

FIRST MOBSTER: Red, Blue or Green?

SECOND MOBSTER: It's always red or blue in the movies.

FIRST MOBSTER: So green?

SECOND MOBSTER: No, not the green! (Part I, Ch.6) linked to Matrix.

Aside from the general connections that can be made to the dozens of reproductions of this scene in various movies, the reference to not cutting the green wire leads us directly to *"Fight Club"* in which Tyler Durden says, *"Oh, heavens no, not the green one. Pull anyone but the green one."* References are made both to other specific characters and texts, such as *"The X-*

files, Buffy the Vampire Slayer, Faust, Paradise Lost, Butch Cassidy and the Sundance Kid, James Bond” etc. which players enjoy to come up with through the context of the games.

The reasons for the popularity of computer games which are put forward above might seem a bit long and might cause boredom. In fact, there are many other reasons that would take a few more pages. The main aim here is to show; the attractive aspects that cause people to be a member of a huge virtual community and the reasons of the computer games unprecedented popularity. Related to this, it might be claimed that such an adorable activity could be made use of in education, could be implanted in the curriculum of schools in lesson plans. Computer games especially designed for educational purposes could be a supporting tool for teachers within the limited atmosphere of the classroom environment.

Games may help address some of the limitations of traditional instruction, by encouraging learning outside of the classrooms, providing experiential learning through valid simulation and replacing predictable or static environments (Ruben, 1999).

2.4. Computer Games in Education

Simulations are particularly important for systemic things that an educator is trying to teach: a lot of stuff in the natural sciences, the physical sciences, and the social sciences. There are a lot of opportunities for modeling stuff, which is difficult to understand as equations on a page. If we had more simulation and visualization, even of basic things like difficult mathematical calculations, a lot more people wouldn't have difficulty with it. Being able to ask "what if?" is more enlightening than looking at equations on a page of a textbook. Also, games may work as experiential tests. These involve the use of well-done simulations in which you are

immersed in the subject and through which you also need to demonstrate your knowledge of the subject.

Many people fear that an immersion in solitary game play, with only a screen as a companion, takes away young people from the social learning that takes place in classrooms. However, a good game creates a game community. In order to play this game, players have to get information from other sources. They have to explore, communicate and post. An entire large community grows up around the core-game mechanism, which is really a set of complex decision-makings that come very quickly.

What has been observed in the multiplayer games is that they foster both competition and cooperation in interesting ways. Teams have self-formed to accomplish tasks. Typically in these games, one of the nice parts is that you need a mix of skills, so that you can't have just a team of warriors. You need warriors, and you need thinkers, and you need wizards. This is no different from saying, "*We want to figure out a physics problem, so we need theoreticians, and we need experimenters, and we need people with other kinds of skills.*" (Foreman, et al, 2004)

The higher degree of social environment you have in the game industry, the more learning you get, because the real power of the learning is in peer-to-peer learning, not in what goes on between a single individual and a document. It is a multiplayer experience when people can create different scenarios which are later on shared. For example, the ecology around the game "*The Sims*" is massively multiplayer, because people are creating a lot of objects and scenarios for it. Those are then exchanged, shared and traded, and that's where the real interaction is.

What game-players are getting is fluency in language and motion. If they immerse themselves for long periods of time in a content area, they become familiar with all of the visual cues around them, and they interact with these cues in context. This is why people learn language better when they go to foreign countries than when they sit in a classroom. It's all those implicit cues that are coming to them, so they pick up vocabulary as well.

Every game realizes that words are best learned just in time and on demand. You should get verbal information close to when you are going to be able to see how it works in the world, so that you have some experience to connect to give it real meaning. Colleges still give information out of any context of demand—big blocks of information that students can't link to experience.

If you want somebody to do biology, and you want students to see how the biological words relate to actual experiences, games let you simulate those experiences as activities that people do. The best way of understanding a word is seeing how it applies in the world, how it applies when you have to do something. You have to use it in talk, or you have to use it in action. That's a fundamental principle of language learning. Games are good at that.

If the notion of game-play is taken and broken down into what distinguishes a good game, the single most important thing is speed of decision-making. When one plays a game, he makes a decision typically every second. Being forced to make those decisions increases the learning enormously. The game-players spend long periods of time immersed in visual environments in which they have to make decisions. They have to think critically, make choices and reflect on all of their actions. So, there occurs learning. It's very important for educators to think about dynamic systems as opposite to static documents.

Foreman, Gee, Herz, Hinrichs, Prensky and Sawyer (2004) discuss the millenium generation. James Paul Gee is the Professor of Reading in the Department of Curriculum and Instruction at the University of Wisconsin and writer of the book "*What Video Games Have to Teach Us about Learning and Literacy* (2003)". J. C. Herz is the author of "*Joystick Nation: How Videogames Ate Our Quarters, Won Our Hearts, and Rewired Our Minds* (1997)" and wrote essays on game design for the *New York Times* from 1998 to 2000. She teaches "Anthropology of Multiplayer Games" at NYU's Interactive Telecommunications Program. Randy Hinrichs is the Microsoft Research Group Research Manager for Learning Science and Technology and especially interested in simulation technologies that support activity-based learning, discovery learning, and game-based learning. Marc Prensky is the author of "*Digital Game-Based Learning* (2001)" and the founder and CEO of Games2train. He has produced numerous computerized learning games. His clients include IBM, Nokia, Pfizer, and the U.S. Department of Defense. Ben Sawyer is codirector of the Serious Games Initiative sponsored by the Woodrow Wilson International Center for Scholars. With Sloan Foundation support, he produced *Virtual U*, a game-based university-management simulator.

They put forward that kids today are seeing more power-performanced learning in their popular culture than they're seeing in their schools. According to them educational models are outdated, because education has been based on a model of scarcity since it was very hard to get good academic material, the right kinds of books and teachers. So, school formed a solution, an economical way of delivering information, using the classroom model, using the teacher model. Today although we have technologies like the Internet, the hand-helds, the computers and the computer games, we are still teaching inside four walls. Modern college kids spend very little time studying outside of the classroom and see both high school and college as out-of-date in terms of how learning works.

They argue that there is a lot of difference between a kid sitting in a classroom early in the morning because he had to be there at 8:30, trying to soak in the information, and a kid sitting in front of a computer, responsible for the next action that's going to happen, operating at twitch speed. The fire that motivates self-directed learning is just turned on.

“What games allow you to do that lectures don’t is to explore the solution space and ask, “What if I did this?” or “What happens in that event?” You can do that in an online or a computer-based environment. Ultimately, what you want are models that you can push and test and explore—truly interactive systems. When I was in college, I was fortunate enough to have a faculty advisor who was a biologist, and I had a one-on-one tutorial about tropical rainforest ecology. He asked me questions based on what he thought I knew, and he’d push me to the limits of my knowledge. But absent a one-on-one tutorial, it’s very difficult to do that. You get into small groups, and you have active discussions, but once you scale the group up, it becomes very difficult because you can’t push sixty people individually to the limits of their knowledge. But you can create an online environment where those sixty people can push against the limits of their knowledge. And that becomes something different and very important. That’s what simulations are good for.” (Herz, 2004)

2.5. Association of Computer Games with Learning in General and Learning Vocabulary

The millennial generation is "Digital Natives," for whom the Internet and new forms of digital communication are second nature, in contrast to the older "Digital Immigrants," who may have

adapted to new technologies and tools, but don't have the same familiarity and commitment. The next generation's enthusiasm for instant messaging, videogames, and peer-to-peer file swapping is likely to be dismissed by their elders as so many ways to waste time and avoid the real worlds of work or school. But these activities may not be quite as vapid as they may seem from the perspective of educators. Researchers point not only to such obvious by-products as computer literacy, communicative skills, and community building, but to less immediately evident benefits like identity creation (avatars in games/chat), collaborative learning (networking to develop game playing strategies), or even mentoring (Jones, 2005).

Constructivist approaches approve games for their self-directed learning, learner-oriented study, creative learning in context, active learning, open study and self-initiated independent future study. Rieber's (1996) research led him to conclude that play has four attributes: it is usually voluntary, it holds intrinsic motivation, involves active engagement and contains a make-believe quality. Games are thought to fill the role of a self-motivating a rewarding activity – a “universally accepted mode of learning”.

Malone's initial theory (1980) includes 3 game categories: challenge, fantasy and curiosity. Challenge includes granting the user uncertain outcomes, obvious and personally meaningful goals, and varying and appropriate difficulty levels. Fantasy includes extrinsic fantasy, in which the users' actions determine what happens in the game, and intrinsic fantasy, in which the fantasy provides feedback to the user. Curiosity yields from environments with appropriate graphics, music and animation (Malone, 1983).

Garvey's (1990) five descriptive characteristics of play: Play is pleasurable, has intrinsic motivation, is spontaneous and voluntary, involves active engagement and has “systematic relations to what is not play”

Play is pleasurable – Harris (1999) found 85% of the time students spend in voluntary use of computers in the home was spent on games and adventures. Mumtaz's (2001) study found that 85% of children enjoyed playing computer games on their home PC, demonstrating more satisfaction with home PC use than school PC use, where computers were more frequently associated with tasks than with play.

Dormann & Biddle (2006) claimed that the role of humour as a mediating tool which helps resolve contradictions within the activity system from conjoining educational objectives within the computer game is vital. It is advantageous for the learning process, in sustaining emotional and cognitive engagement, as well as stimulating social presence. They argued that humour makes the game experience more enjoyable, through emotional and persuasive arguments and characters that are more believable and interesting, thus in turn stimulating affective learning. They believe that through designing an engaging role-play, educators can sustain personalised knowledge that encourages critical thinking.

Play has intrinsic motivation – Garvey (1990) suggests that children play solely for the sake of playing. The control, relevance, and perceived competence blend with user's curiosity to positively impact their continuing motivation that which prompts students to return to an activity based on their intrinsic motivation. Reiber (1996) concludes that games represent the instructional artefact most closely matching the characteristics of intrinsically motivating learning environments: challenge, curiosity, fantasy and control.

Play involves active engagement – Csikszentmihalyi's (1993) flow theory defines the optimal state of flow as the point where skill and challenge meet – where the activity is engaging because it meets the skills and needs of the participant. PC games support the eight major

components of flow: tasks that can be completed by the player, opportunity for concentration on a task, clear goals, immediate feedback, deep but effortless involvement, control over actions, decreased concern for self with stronger sense of self-following activity, and a distorted sense of time (Jones, 1998). Educational computer games can sustain active engagement in game activity through seamlessly integrated content with game play (Rieber, 1996) – “*one cannot say where the content stops and the game begins.*”

Play is related to Non-Play activities – Games may also serve many functions: tutoring, amusement, exploring new skills, promoting self-esteem, drill and practice, or creating a change in attitudes (Dempsey et al., 1993).

Within the scope of the direct instruction theory, a teacher must teach properly for a student to learn. It includes orientation of what is to be taught, presentation of the material, and practice of what is learned. CAI has taken a direct instruction approach in presenting performance objectives and breaking them into smaller steps (Snowman & Biehler, 2000). PC games can easily adapt D.I. by integrating orientation, presentation and practice into a more engaging game play.

[Smith, Morey & Tjoe](#) (2007) investigated whether learning of mental imagery skills for visualizing shapes be accelerated with feature masking or not. They tested hypothesis using an online computer game involving rotating and stamping a 3D cube on a 2D pattern. According to a chi-squared test, people who trained with 3D feature-masks reported using significantly more visual imagery strategies on a related visualization post-test. Spatial feature-masks provide a new building block for instructional designers to address educational outcomes involving visual imagery of shapes.

The importance of debriefing and reflection in educational games, suggesting that players be given the opportunity to reflect on their feelings of the results, recount their version of the activity, express what they learned, draw a context between the game and the real world, extrapolate from the game to potential situations, and forecast how they would play the game differently (Thiagarajan, 1996).

Henderson, Lemes, and Eshet (2000) redesigned “a discipline focused” curriculum for a school emphasizing thematic units. The teachers in the study integrated a CD-ROM micro world simulation in their classrooms. Results indicated improvement in thinking skills and strategies, recall, classification skills, inference and use of scientific language. Researchers emphasize that incorporation of the multimedia element with classroom interaction was key in successful implementation and that the game element should be used in combination with other contexts for learning.

Game-based virtual learning environments have the potential to provide opportunities for engagement in authentic contexts while completing authentic tasks such as problem solving. Research on analogical encoding suggests that teaching students to compare cases side-by-side to draw out the underlying principles improves knowledge acquisition and transfer. Analogical encoding aids students in attending to the deep underlying structures of cases, thereby reducing the potential distraction of surface features ([Williams, Ma, Feist, Richard & Prejean, 2007](#)).

[Ebner & Holzinger](#) (2007) worked on an experimental study to evaluate the use of an online game for learning in higher education aims to make complex theoretical knowledge more approachable. They claimed that permanent repetition will lead to a more in-depth learning.

The online game was used for the first time during a lecture on Structural Concrete at Master's level, involving 121 seventh semester students. Pre-test/post-test experimental control group design with questionnaires and an independent online evaluation. The findings supported the efficacy of game playing. Students enjoyed this kind of e-learning. The minimum learning result of playing the game was equal to that achieved with traditional methods.

Milheim (2007) a lecturer at Penn State University, USA suggests that technology use among adult literacy students has positive effects on learning outcomes, with the majority of these studies focused on traditional classroom environments where technology is used as a supplement to existing instruction. According to her, adult literacy students are affected in many ways by technology use within less structured settings. Therefore, computer games should be an effective tool to support learning pace by creating an informal environment for the students.

In her study, De Freitas (2006) aimed to highlight key issues and perceptions that inform and underpin how games and simulations were regarded by learners, tutors and experts using these tools. Several key issues were highlighted about the validity of using games and simulations, including strengths of games to motivate learners, as well as scepticism about its efficacy as a learning tool. The results showed that games and simulations are regarded as tools that may support differentiated learner groups including underserved learners, learners with skills needs and informal learners seeking to learn from experiences, as well as supporting collaborative learning practices. Furthermore, the majority of learners and tutors using games and simulations involved in the study appreciated using these tools as part of their wider learning and teaching practices.

The paper reports a small-scale, long-term pilot project designed to foster strategic and reasoning abilities in young primary school pupils by engaging them in a number of computer games, mainly those usually called mind games (brainteasers, puzzlers, etc.). In this paper, the objectives, work methodology, experimental setting, and tools used in the project are outlined, together with an analysis of some findings. In particular, we perform a brief analysis of some of the cognitive processes involved in playing with the computer games considered; we then discuss software features that, in our experience, help children tackle different cognitive tasks. The quantitative data collected during the pilot allow us, also, to take account of children's performance according to a number of different parameters, such as their level of achievement, the game's degree of difficulty and the type of data handled. Moreover, we reflect on the general impact of the project on children's reasoning abilities. The extent and duration of the study mean that, whilst the findings are not generalizable, they do offer insights into mechanisms underpinning basic strategic and reasoning skills as well as the educational potentialities offered by some of the existing computer games; they also point to some areas for further research.

Waters (2007) reports the potential of online role-playing games to be a powerful tool for English as a second language (ESL) learning. In his article he mentions about a project which was held by Professor Edd Schneider (an associate professor in the Department of Information & Communication Technology at The State University of New York (SUNY) at Potsdam) who has been researching games and teaching game design and development for more than 10 years and game designer Kai Zheng, - a Chinese software developer who has written for videogame magazines in China. They suggested that multiplayer online role-playing games, better known as MMORPGs, could help Asian teens acquire English language skills. Their message threw a spotlight on a relatively new area of investigation in the

evolving relationship between education and computer games--namely, whether an MMORPG might serve as a pedagogical tool for students learning ESL. They argued that the internationally popular MMORPG World of Warcraft (WoW) could be marketed on ESL servers and would have great potential as tools for ESL programs in US schools.

Computer games can be an effective tool even with problematic learners. Cognitive limitations and behavioural problems of children especially with fetal alcohol spectrum disorder make teaching these skills challenging for parents and teachers. In a study by [Coles, Strickland, Padgett & Bellmoff](#) (2007) 32 children, ages 4-10, diagnosed with fetal alcohol syndrome (FAS) learned fire and street safety through computer games that employed "virtual worlds" to teach recommended safety skills. Children were pretested on verbal knowledge of four safety elements for both fire and street safety conditions and then randomly assigned to one condition. After playing the game until mastery, children were retested verbally and asked to "generalize" their newly acquired skills in a behavioural context. They were retested after 1 week follow-up. Children showed significantly better knowledge of the game to which they were exposed, immediately and at follow-up, and the majority (72%) was able to generalize all four steps within a behavioural setting. Results suggested that this is a highly effective method for teaching safety skills to high-risk children who have learning difficulties.

By using their theoretical framework of multimodal processing, Bosseler & Massaro (2003) developed and evaluated a computer-animated tutor, Baldi, to teach vocabulary and grammar for children with autism. Baldi was implemented in a Language Wizard/Player, which allows easy creation and presentation of a language lesson involving the association of pictures and spoken words. The lesson plan included both the identification of pictures and the production of spoken words. In Experiment 1, eight children were given initial assessment tests, tutorials,

and reassessment tests 30 days following mastery of the vocabulary items. All of the students learned a significant number of new words and grammar. A second within-subject design with six children followed a multiple baseline design and documented that the program was responsible for the learning and generalization of new words. The research indicated that children with autism are capable of learning new language within an automated program centered around a computer-animated agent, multimedia, and active participation and can transfer and use the language in a natural, untrained environment.

Children's literature is a primary source for introducing young children to new words at home and at school, and children's early vocabulary knowledge is a key component of oral language, which is essential for comprehension. [Labbo, Love & Ryan](#) (2007) focused on children from low socioeconomic backgrounds who frequently find themselves in a vocabulary crisis. They applied computer-related activities in the classroom to tackle this problem and apart from classroom environment they used computer games as follow-up activities, in which they came up with promising results.

Wood (2001) conducted a research about the pedagogical underpinnings of software programs on the market which claim to foster literacy and lexical development for both L1 and L2 learners. She also examined the potential of technology (e.g., hypertext, animations) to enhance vocabulary learning. She searched for the answers of several questions, such as Does instruction relate the new to the known?, Does it provide multiple exposures of new words?, Does it teach students to be strategic readers? And especially How can software packages and their potential impact on vocabulary development be assessed objectively?. She established criteria for the effectiveness of vocabulary teaching and evaluate samples of available software chosen for their potential effectiveness given existing research. She presented the

findings from a content analysis of 16 software products, designed for students in third to fifth grade, which have been highly recommended by teachers and other proponents of educational technology. Because these introduce a substantial number of new vocabulary words, they lend themselves to intensive examination. Findings indicated that many products that made no explicit claims about fostering vocabulary learning, in fact, incorporated more guidelines than many that made explicit claims.

METHOD

The design of this study, participants, instruments and data collection procedure are mentioned in this section. Furthermore, detailed information is provided about the selection of the computer game which was used in the study.

3.1. Research Design

This paper mainly investigates if the use of computer games has positive effects on learning a set of new vocabulary. It also aims to get feedback from students at Upper-Intermediate level about their ideas whether computer games improve their vocabulary knowledge or not. Thus, the researcher comes up with two questions at this point to be answered.

- 1- Do Single-Player Computer Games increase vocabulary learning?
- 2- What are the upper-intermediate EFL students' ideas about the efficiency of Computer Games on learning a new set of vocabulary?

3.2 Participants

The selection of the participants was the first difficulty that was come up with due to the fact that all of them should be from the same university by means of the same environment, should have covered the same preparatory education and be at the same level of English Language. Since Yıldız Technical University is a school where all of the students have to cover 30% of their lessons in English, achieving the preparatory class, they continue their English Language education covering several obligatory Advanced English lessons each with 3 credits. Thus, in the beginning it seemed a piece of cake to find the suitable participants.

Finding participants for the control group did not cause a significant problem. However, later on, it was realized that an experiment group consisting of students who would not cover the “Advanced English 1 and 2 – 9051031/9051032” lessons in the following terms had to be found, because if they had covered the lessons, they not only would have learned the target vocabulary which is the subject of this study during the lessons like the control group, but also would just have been consolidating their knowledge on the target vocabulary by playing computer games, something which would effect the validity of the study. The experiment group should not have interacted with the target vocabulary, which was going to be tested in the pre and post-tests, somewhere else. They should have been interacting with them only via the computer games. Both control and the experiment groups should be at the same level, but should learn the target vocabulary in different ways.

Related to this, a research was initiated for appropriate nominees for the study. After achieving the preparatory classes, students are given a chance to take the “Advanced English 1 and 2 Exemption Test” in order to be exempted from both of these lessons in the following terms at Yıldız Technical University. These exempted students would be the best participants for the study from this point of view, as they were upper-intermediate students who succeeded in the Advanced English 1 and 2 Exemption test, and would not cover these lessons during the following terms.

An appointment was arranged with the Student Affairs Head Office in order to find out the names and contact phone numbers of those students to get in touch with them. At the end of this research, appropriate nominees were found - a list of 50 students who passed the test with the lowest obligatory grades and were exempted from these lessons, and 80 more students who couldn't pass the “Advanced English 1 and 2 Exemption Test” just because they got a few

grades below the required grade to be exempted and had to cover these lessons in my own classes during the 2006-2007 academic year. By this way the level difference between the groups was eliminated.

As a result, all of the participants had covered preparatory classes during 2005-2006 academic year at Yıldız Technical University and were at Upper-Intermediate Level from English language point of view. They were given an introspective questionnaire and depending on the answers, 35 of the exempted students from different departments were chosen for the experiment group, especially the ones who mostly had been interested in playing computer games and passed the exemption test with a score very close to the exemption grade, and 35 more students who had to cover these lessons during the term were chosen for the control group who were not very keen on computer games and unfortunately had failed with a very close score to the exemption grade.

3.3. Instruments

As Creswell (2003) and Silverman (2001) stated it should always be considered that results from one method can help develop or inform the other method, that's why multiple approaches to data collection in a study is important. In this study to best understand the research problems, "quantitative and qualitative methods" were used. The study lasted 15 weeks and pre and post-tests were designed to get quantitative data about how much students learn the target vocabulary. Furthermore, an introspective questionnaire to find the most appropriate subjects for the study and a retrospective questionnaire to get feedback from the students at Upper-Intermediate level about their ideas whether computer games improve their vocabulary knowledge or not were prepared by the researcher himself. While preparing questionnaires both close-ended and open-ended questions were asked to support the questions one another.

Pattern-coding was used to categorize the responds to the open-ended questions (Miles and huberman, 1994).

3.3.1. Pre and Post-Tests

Data for the study was collected by means of pre and post-tests (Appendix K, Appendix L, Appendix M and Appendix N) which had been prepared by the Modern Language Department Testing Office especially for this study, apart from the normal visa format.

The normal format of the visas that are used at Yıldız Technical University is that they consist of three sections as reading comprehension (an authentic text related to the topic the students have covered during the term), vocabulary (words, idioms and phrases they covered in the course book “Global Outlook 2”) and writing (response paragraphs to the text they are given in the visa). However, the pre and post-tests which were given to the participants consisted of only vocabulary section of about 40 questions in “fill in the blanks” format. Both pre and post-tests had similar format and the same words in different contexts in order to test which group has learned those words better.

A precious effort was spent while choosing the words to be asked in these tests. The words which were asked in these tests were selected under the headlight of several criteria:

First of all, it was decided which words to be placed in the texts with an extreme care, since the aforementioned words should exist both in the computer games which was chosen to be played during the study and in the book that is covered at the university in “Advanced English 1 – 9051031” lesson content, in order to evaluate whether there was a significant difference between the students who learn the target vocabulary only in the class environment and the ones who come across with the target vocabulary only by playing computer games.

Secondly, a list of the target words that we try to teach with the book “Global Outlook 2” during the fall term was made. “Global Outlook 2” was chosen by a committee of 18 lecturers including the academic coordinator, material office and testing office members depending on the requirements of the lesson and the need analysis that had been done among the students the previous term. The content of the lesson includes teaching the students reading strategies for different types of texts and writing response paragraphs, and improving their vocabulary knowledge. Thus, the book was chosen since it is Advanced Level, consisted of authentic updated texts parallel to today’s global issues, and we could teach our students plenty of advanced level vocabulary, furthermore at the end of each reading text there is a “Interactive Journal Response” section where the students could practice summarising a paragraph and writing a response to the text they have read.

Thirdly, the researcher played the computer game he had chosen by himself, tried to scan as many paths as he can and noted down most of the advanced level words. Finally, both of the lists were compared and 40 common words which exist in both lists and might be used in this study were chosen (Appendix O).

3.3.2. The Introspective and Retrospective Questionnaires

An introspective questionnaire (Appendix A, Appendix C, Appendix D and Appendix E, Appendix F, Appendix G and Appendix I) with 6 open-ended and 13 close-ended questions was prepared by the researcher and given to the 130 students, which aimed to find out the most appropriate participants depending on the responds.

A retrospective questionnaire (Appendix B, Appendix H and Appendix J) with 1 open-ended

and 7 close-ended questions was given to the selected students at the end of the study, which aimed to find out the general comments of the students about the efficiency of computer games on vocabulary learning and to see if the students can use the vocabulary that they have learned while playing computer games in different environments.

3.4. Data Collection Procedure

The study was conducted in seven phases.

3.4.1. Phase 1: Delivering an Introspective Open and Close-ended Questionnaire

Selecting the most appropriate participants was one of the most important parts of the study. In order to find the suitable subjects, the researcher designed an introspective questionnaire depending on some studies which were conducted before. [Tien & Fu \(2007\)](#) searched for the answers of some questions focusing on two dimensions of the digital divide--computer use and computer knowledge. (1) What are the undergraduates doing with the computers they use at colleges? (2) How do undergraduates perform in regard to computer knowledge and skills? (3) What consequences does the digital divide have for student academic performance? The survey investigated 3083 first-year college students of 12 4-year universities in Taiwan. A total of 2719 of them completed the questionnaires. In this study, the digital divide is measured in terms of computer use, which includes a variety of purposes for using computers and academic-related work as a proportion of total computer hours, and computer knowledge. The main findings include the following: (1) Undergraduates use computers not only for fulfilling their academic requirements and searching for information, but also for entertainment. On

average, undergraduates spend about 19 h per week using computers, of which 5 h are academic-related. (2) Most undergraduates perform at the middle average level in terms of computer knowledge.

In another study, [Kuhlemeier & Hemker](#) (2007) focused on the impact of students' use of the Internet and the computer at home on digital skills they need for school. The study was conducted in the lower grades of Dutch secondary education (students aged 13-15). More than 2500 students, distributed over 116 classes in 68 schools, participated in the study. Home access to e-mail and the extent to which students use the home computer for surfing, e-mailing, chatting and text processing were evaluated.

Depending on the aforementioned studies and the local conditions of Turkish students, an introspective questionnaire with 6 open-ended and 13 close-ended questions was given to 130 students. In the first part of the questionnaire in the open-ended questions #'s 1, 2, 3, 6 and close-ended questions #'s 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, students' ideas about their leisure time activities, how long they have been playing PC games, the duration they spend for playing computer games in a day / week, their preferences on PC games and whether they read the demos and instructions during the game were questioned.

In the second part in the open-ended question # 7, it was intended to learn about their ideas what makes a computer game worth to play, so that the evaluation of the responds could be used while choosing the appropriate game for the study. In conclusion, evaluating the questions, it was aimed to find out the most appropriate participants depending on the responds.

3.4.2. Phase 2: The Selection of the Participants

The research was conducted at Yıldız Technical University School of Foreign Languages Department in Istanbul, Turkey. The 70 participants were selected randomly from different engineering departments, mainly depending on the first questionnaire responds, which was given to 130 students who had covered preparation classes during 2005-2006 academic year at Yıldız Technical University.

3.4.3. Phase 3: The criteria for the selection of the game

There is growing interest in the use of games for educational purposes, particularly with regard to teaching curriculum subjects. Much of the research, however, has focused either on the content of games or the learning theory they illustrate. [Pelletier & Oliver](#) (2006) presented a paper which focused on understanding learning within specific instances of play. They argued that understanding such processes is crucial for incorporating specific games into educational systems by evaluating their usefulness and limitations. The main requirement for the selection of the game specifically for this study was that it should be kind of game which would reinforce and facilitate the participants' learning a new set of vocabulary.

First of all, the game is full of instructions, but why should the players generally need the instructions or feel the necessity to read them? There may better be optional written and audio instructions for those who might prefer hearing them. Depending on the familiarity of the genre, players may not need instructions. Or instructions may not be needed at the beginning of the game, but may be necessary as players progress. Adventure games often scaffold their instructions, providing information on a need-to-know basis – for example, a training room that

is always open. Most of the instructions given are in such an explanatory way that users may not be aware that they are receiving instruction. In this game – *Oblivion* , the player must read the instructions to continue the game. He is given a lot of missions to complete and related to this without comprehending the instructions he cannot go on within the plot. This was a very appropriate feature for the study, because trying to understand the instructions meant finding the meanings of unknown words for the player. Especially, the first part of the game is full of tutorials to inform the player about what to do.

Secondly, more than 1000 characters and races in the game become more realistic with their face impressions, lip harmony and complete dialogues. The player has to communicate with them to proceed in the scenario, a feature which is thought to be advantageous in acquiring vocabulary since the player has to understand what they say or express himself meaningfully. Different dialogues are formed with each race and depending on your responses; the action flow alters to a different direction. The relationships with the races are also very realistic. The dialogues that the player has with NPCs (Non-player characters) improve his social relationships and in return can get more information from them. If the player gives harm to someone or steals something in front of others, they can be suspicious about him. He can understand whether they trust him or not from their utterances and faces. Furthermore, there is lockpick facility which enables the player to take these lockpicks from the characters that he kills, save and use them later on to unlock locked doors and chests or by means of bribe when he wants to make NPCs speak. In addition to these, there is an inventory click on the screen where the player can find all the conversations he has done so far and go over them to remember some vital points. So, apart from the obligation of comprehending the instructions to continue the game, the player also has to develop dialogues with the characters within the game plot. And this would persuade them to comprehend the meaning of a lot of words as well.

Realistic social atmosphere would also reinforce the learning of new vocabulary, because "big-world, do-anything" spirit of the game would make role-playing "meaningful". Thus, when the context was meaningful, the participants would feel themselves more immersed in the story and be more motivated to find the meaning of unknown words. The game which had been chosen would come over all of these negative possibilities.

The responds given by the participants in introspective questionnaire also enlightened the factors in setting up the criteria and the following reasons were reached for the selection of this game. One might find this section a bit long and boring, however, the detailed information below will definitely provide a wider perspective to the readers to capture the big picture which displays the reasons why this game is be the perfect match for the study.

3.4.3.1. General Information on the Selected Game

The Elder Scrolls IV: Oblivion is a single player fantasy-themed action-oriented computer role-playing game developed by Bethesda Game Studios and published by Bethesda Soft works and the Take-Two Interactive subsidiary 2K Games.

One of the reasons why this computer CRPG was chosen is that it is a recently released game including a story adorned with references to recent narratives which are popular among the teenagers. At *Game Rankings* (a website which keeps track of video games reviews from other sites, and combines them to present an average rating for each game), *Oblivion* holds an average review score of 94% for the Xbox 360, making it the 2nd highest rated game of 2006; *PC Gamer UK* (is a computer games magazine, founded in 1993. It is a popular magazine

devoted to reviewing new computer games. It features news on developments in the gaming industry, previews of new games, and reviews of the latest popular PC games), *PC Zone* (the first magazine dedicated to games for IBM-compatible personal computers), *GameSpot* (the first magazine dedicated to games for IBM-compatible personal computers and is currently one of the 200 highest-trafficked websites) *IGN* (a multimedia news and reviews website that focuses heavily on video games.), *Electronic Gaming Monthly*, and *OXM* (Official Xbox Magazine) have all awarded the game 9/10 or more, and praised the game for its impressiveness and scope, winning the game awards from various outlets. IGN stated that "*Oblivion* is a thoroughly enjoyable, user-friendly, gorgeous experience with enough content to keep you returning time and time again".

The game was chosen on account of several reasons as aforementioned, but especially because it perfectly matched the preferences of the participants of the study. Realistic simulations and animations, visual and sound effects each of which was planned carefully in details were some of the components that would attract their attention. *Oblivion* provided these more than requested.

For example, developers pushed the game's view distance "extremely far out", so that the player character can see for miles - mountains, towns on the horizon, grand forests in the distance, everything. It makes more use of multi-level environments than did previous games, varying the topology to a greater extent. A higher density of content was pursued in the creation of the game's dungeons, with a greater level of "monster encounters, quest NPCs, puzzles, and our brutal physics-based traps". The populations represented in *Oblivion* do not match the numbers attested in previous in-game literature — populations of 'thousands upon

thousands'. According to a Microsoft press release, *Oblivion*'s game world is approximately 16 square miles (41 km²) in size. It is quite unbelievable.

3.4.3.2. The Gameplay

Oblivion is a fantasy-based role-playing adventure game and an example of open-ended (one that does not usually have a specific, predefined ending) or sandbox (a game that is more often played in a goal-directed manner) gameplay. The main quest may be delayed or completely ignored as the player explores the expansive game world, following side quests, interacting with NPCs, and developing a character according to their taste (www.gamerankings.com). The player is free to go anywhere inside the land of *Cyrodil* at any time while playing the game, and even after completing the main quest storyline, the game never ends, allowing the player to build their character in whatever way they want, with no restrictions on skills or equipment. The game contains many enemies for the player to fight, including monsters and animals. Many enemies, quests, and treasures are "leveled", or become increasingly difficult, as the player gains levels. The player, however, has the option of adjusting the difficulty level (www.metacritic.com).

By the help of the fast-travel system, if a player visits a location, it appears as an icon on their map. The icon maybe clicked to visit the location later on, with time elapsing in the interim. There is balance stealth, combat and magic skill sets. The game has "mastery levels," which give skill-specific bonuses when the player reaches a certain level in that skill. The combat system was revamped, with the addition of "power attacks". The artificial intelligence of the game provides the Oblivion characters the opportunity to program themselves and make decisions depending on the actions happen around them 7 days 24 hours.

Depending on 130 participants' comments about the components of a good computer game, this game was the perfect match for their desire from gameplay point of view.

3.4.3.3. The Plot

The whole plot is also given below to show how open-ended paths and never-ending missions the Oblivion has. The player experiences a different life in a different world. He creates his dream character such as a noble warrior, a sneaky assassin or an old magician. Exploring an unknown world on his own, fights with bandits and monsters, mixing medicines, making spells, persuading friends, struggles would motivate the participants to continue the game as long as it was intended.

Oblivion begins with the arrival of Emperor Uriel Septim VII, accompanied by a troupe of Blade bodyguards, at the palace prison, seeking to flee from a group of assassins—later revealed to be members of the Mythic Dawn—through a secret underground exit. By chance, the exit is located in the cell occupied by the protagonist. The Emperor frees the player, and sets off through exit into the catacombs as the protagonist follows. At the end of the catacombs, the group is ambushed, and quickly overwhelmed by assassins, which results in the protagonist taking on the task of guarding the Emperor while the surviving bodyguards engage the enemy. While awaiting the result, Uriel entrusts the protagonist with the Amulet of Kings, a special amulet that can only be worn by those of the Septim bloodline, and orders the player to take it to a man named Jauffre. Immediately afterwards, an assassin ambushes and kills the emperor. The sole surviving guard, Baurus, questions the protagonist, and explains that Jauffre is the Grandmaster of the Blades, and can be found at Weynon Priory.



As the game progresses, it is revealed that the Emperor's death has allowed multiple gates to Oblivion to open, and a Daedric invasion is to begin as a result. The only way to close down the gates permanently is to find someone of the Septim bloodline to retake the throne and re-light the Dragonfires in the Imperial City. Fortunately, it is also revealed that there is indeed still an heir to the Septim throne: an illegitimate son named Martin Septim who resides in Kvatch. However, the Daedra have Kvatch under siege and the protagonist has to venture into the Planes of Oblivion and close down the gate. After having closed the gate, the protagonist arrives at the Kvatch chapel and persuades Martin to join him to travel back to Weynon Priory.

Upon arriving, the player finds that Weynon Priory is being raided by the Mythic Dawn and the Amulet of Kings has been stolen. Recovering from the attack, Jauffre orders the protagonist to escort himself and Martin to Cloud Ruler Temple, the stronghold of the Blades in the Jerall Mountains. At Cloud Ruler Temple, Martin is recognized as the Emperor and is given command of the Blades, and the protagonist is sent off in search of the Amulet. After some investigating, the protagonist arrives at the Shrine of Mehrunes Dagon, a Daedric cult lair run by the Mythic Dawn, believing the Amulet to be held there. The Mythic Dawn's leader Mankar Camoran escapes to his *Paradise* through a portal using a mystical book called the Mysterium Xarxes. The protagonist recovers this book and returns it to Martin, who deduces that the only way to recover the Amulet is to follow Camoran, and create a portal to the paradise as well. A

"collect-the-pieces" plot begins, as the player must recover three key items that are necessary to recreate the portal. Having acquired all three items, Martin reveals a final item that needs to be used in order to create the portal, a Great Sigil Stone used in a Great Gate to the Planes of Oblivion, similar to the one that devastated Kvatch. Martin and Jauffre hatch a plan that involves allowing Bruma to be attacked by the Daedra so that a Great Gate can be opened. The protagonist then must venture into the gate and obtain the Great Sigil Stone. Arriving on the battlefield of Bruma, Martin gives a moving speech before charging into battle against the Daedra. Many men are lost, but a Great Gate is finally opened. The protagonist enters and recovers the stone.

Upon returning to the Temple, a portal is created and the protagonist ventures through, arriving at Camoran's paradise. After fighting through Camoran's men, the protagonist confronts him in his throne room, and slays him in battle. Upon his death, the protagonist takes the Amulet from Camoran's neck, and sees Paradise evaporate around him. The protagonist returns the Amulet to Martin, and the Blades travel to the Imperial City to re-light the Dragonfires, ending the Daedric invasion. However, the Daedra begin a desperate assault of their own and overrun the Imperial City. The protagonist and Martin fight their way to the Temple of the One, in the Imperial City Temple District, to find that a 200-foot tall beast is wreaking havoc in the city, revealed to be the Daedric Lord Mehrunes Dagon himself. Martin fights his way into the Temple, and shatters the Amulet of Kings to merge himself with the spirit of Akatosh, the Dragon-God of Time, becoming his Avatar. He defeats Dagon in one final confrontation. The Amulet of Kings is destroyed, Martin disappears, the gates of Oblivion are shut forever, and the throne of the Empire again lies empty. A final monologue by Martin, describes this in an optimistic light, claiming that the future of Tamriel is now in the protagonist's hand. After the

battle, Lord Chancellor Ocato of the Elder Council proclaims the protagonist Champion of Cyrodiil.

3.4.4. Phase 4: Delivering a Pre-Test to Both Control and Experiment Groups

A vocabulary test of 40 questions in “fill in the blanks” format which had been prepared by the Modern Language Department Testing Office especially for this study, was given to both of the arranged groups consisting randomly selected students from different engineering departments as the pre-test of the study. The control group was to see the target vocabulary asked in the test during the following terms in the classroom environment and the experiment group was to interact with those words only while playing computer games. Both of the groups were not informed that it was a test of a target vocabulary list in order to keep them focused on specific words. Furthermore, the control group was going to learn many other words along with the selected target vocabulary during the following terms and the experiment group was going to come up with many other words throughout the computer games.

3.4.5. Phase 5: The Schedule Design with the Selected Participants

After selecting the students and delivering the pre-test to both groups, a short meeting with the experiment group was held at the beginning of 2006-2007 academic year in the fall term. The schedule design was discussed with them in detail. They were informed that:

- They were going to be a part of a research conducted by the School of Foreign Languages which would last for 15 weeks during the fall term.

- They had to play the computer game that had chosen in advance. It was a great relief to learn that most of them had never played the game before.
- They had to play the game at least 3 hours every week only in the laboratory, since the control group would spend 3 hours in the lesson every week as well.
- They had to send the researcher weekly reports including the total amount they had played the game, which level they were at etc.

The possibility of their not playing the game regularly every week wouldn't be a problem, because the students in the experiment group were very keen on computer games. They had already been playing games more than the total amount which they were expected to play. So that was not a real worrying aspect for the research.

Control group covered the lesson in the classroom environment with standard skimming, scanning reading techniques, warm-up and follow-up activities guided by the teacher. They first had discussion session as a warm-up for about 20 minutes, talking about every aspect related with the text they were going to cover that day. Then they read the text, did the vocabulary exercises, answered the comprehension and inference questions.

3.4.6. Delivering a Retrospective Open and Close-ended Questionnaire

The experiment group was given a retrospective questionnaire (Appendix B) of 1 open-ended and 7 close-ended questions, so as to learn their ideas on vocabulary learning as a result of playing computer games. They gave their comments about whether PC games are efficient on

vocabulary learning or not. They also put forward their ideas about the clues that helped them to realise the improvement in their vocabulary learning.

3.4.7. Delivering a Post Test to Both Control and Experiment Groups

Another vocabulary test (Appendix L, Appendix N) of 40 questions in “fill in the blanks” format was given to both of the arranged groups as the post test of the study. The aim was to test how well the experiment group learned the target vocabulary and if there was a significant difference between the control and the experiment groups in learning those words efficiently.

RESULTS

SPSS version 12.0 was used to analyse the exam results (with independent variable and paired sample t-tests) and the frequency of the questionnaire results. All of the analyses were supported with descriptive statistics to show the means of the participants, as well as the spread of the scores in each. The answers in the open-ended questions in both introspective and retrospective questionnaires were summarised under subheadings to present students' ideas about the efficiency of Computer Games on vocabulary learning.

4.1. T-Tests

According to the descriptive results in *Table 4*; the pre-test success mean of the control group is $\bar{X} = 53,89$ and the pre-test success mean of the experiment group is $\bar{X} = 51,06$. This absolutely shows that both of the groups are approximately at the same success grade at the beginning of the research. Furthermore, as it is clear in *Table 5*, there is no significant difference between the pre-test scores of the control and experiment groups [$t_{(70)} = 0,268$, $p > 0,05$].

(Table 4)

The Pre-test Success Mean of the Control and Experiment Groups

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pre_Test	1	35	53,89	11,631	1,966
	2	35	51,06	9,443	1,596

(Table 5)

*The Pre-test Scores of the Control and Experiment Groups***Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre_Test	Equal variances assumed	1,540	,219	1,117	68	,268	2,829	2,532	-2,225	7,882
	Equal variances not assumed			1,117	65,247	,268	2,829	2,532	-2,229	7,886

According to the descriptive results in *Table 6*, the pre-test success mean of the control group is $\bar{X}=53,89$ and the post-test success mean of the control group is $\bar{X}=58,06$. This absolutely shows that the control group has made a meaningful progress throughout the study. Furthermore, as it is clear in *Table 7*, there is a significant difference between the pre-test and post-test scores of the control group [$t_{(35)} = 0,000, p < 0,05$].

(Table 6)

*The Pre-test Success Mean of the Control Group***Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Control Group	Pre-Test	53,89	35	11,631	1,966
	Post-Test	58,06	35	11,316	1,913

(Table 7)

The Pre-test and Post-test Scores of the Control Group

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Control Group	Pre-Test -- Post-Test	-4,171	3,967	,670	-5,534	-2,809	-6,221	34	,000

According to the descriptive results in *Table 8*; the pre-test success mean of the experiment group is $\bar{X} = 51,06$ and the post-test success mean of the control group is $\bar{X} = 56,71$. This absolutely shows that the control group has made a meaningful progress throughout the study. Furthermore, as it is clear in *Table 9*, there is a significant difference between the pre-test and post-test scores of the experiment group [$t_{(35)} = 0,000$, $p < 0,05$].

(Table 8)

The Pre-test Success Mean of the Experiment Group

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Experiment Group	Pre-Test	51,06	35	9,443	1,596
	Post-Test	56,71	35	8,463	1,431

(Table 9)

The Pre-test and Post-test Scores of the Experiment Group

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Expeirment Group	Pre-Test – Post-Test	-5,657	4,058	,686	-7,051	-4,263	-8,247	34	,000

According to the descriptive results in *Table 10*; the post-test success mean of the control group is $\bar{X}= 58,06$ and the post-test success mean of the experiment group is $\bar{X}= 56,71$. This absolutely shows that both of the groups are approximately at the same success grade at the end of the research. Furthermore, as it is clear in *Table 11*, there is no significant difference between the post-test scores of the control and experiment groups [$t_{(70)} = 0,576, p>0,05$].

(Table 10)

The Post-test Success Mean of the Control and Experiment Groups

Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
post_test	Control Group	35	58,06	11,316	1,913
	Experiment Group	35	56,71	8,463	1,431

(Table 11)

The Post-test Scores of the Control and Experiment Groups

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Post_test	Equal variances assumed	1,657	,202	,562	68	,576	1,343	2,389		-3,423	6,109
	Equal variances not assumed			,562	62,970	,576	1,343	2,389		-3,430	6,116

4.2. The Evaluation of Open-Ended Responds of the Introspective Questionnaire

(Appendix A, Appendix C, Appendix D, Appendix E, Appendix F, Appendix G, Appendix I,)

The main reason of the introspective questionnaire was to find out the most appropriate participants depending on the responds. First of all, it was tried to figure out how they spend their spare time, and if they played computer games, how long and how many hours daily they had been playing them, the game and platform preferences, so that the ones who are keen on computer games or vice versa could be selected. In order to analyse this, a categorization was accomplished and pattern coding was applied (Miles & Huberman).

4.2.1. Question 1: How do you spend your free time? (Appendix C)

This question was categorized according to the answers given by the respondents and coded.

These categories are shown in the *Table 12* below.

(Table 12)

Categories about How They Spend Their Free Time

Category 1	47.7% - Reading
Category 2	33.8% - Playing computer games
Category 3	30% - Watching movies
Category 4	20.7% - Listening to music
Category 5	12.3% - Doing sports
Category 6	10% - Going out
Category 7	6.15% - Meeting with friends

A great majority of the respondents such as 47.7% (62 students) spend their free time especially by reading. This result was surprising because this Xgeneration (namely the next generation) does not fancy reading very much despite their baby bloomer parents who are keen on reading more than them. Since they take Advanced English 1 and 2 (Reading and Writing) lessons at Yıldız Technical University, lecturers know from their attitudes in the lessons that they are not aware of most of the classical novels which are believed to be read. Of course, the limited number of the respondents does not refer to the whole generation; however, the

teenagers today do not seem to read a lot. Thus, it was a bit surprising but also satisfactory to come up with such a rate of bookworms in the end.

Computer games were the second most preferred free time activity with a rate of 33.8 % (44 students). This was something which was predicted, on account of the fact that teenagers are becoming more and more unsociable; as a result they prefer individual activities to spend their free time. This comment is also reinforced with the other responds of the students, such as just 10% (13 students) prefer going out and 6.15% (8 students) like meeting with their friends somewhere. Furthermore, a small portion of 12.30% (16 students) is interested in sports, especially football. It was exciting to find out that most of them preferred playing computer games in their free time. Otherwise, it would be a little bit problematic to find the appropriate participants for the study, which is called “opportunism” – just for the sake of the study.

30% (39 students) prefer watching movies in their spare time, something which can be understood, since the new generation find it more enjoyable and practical watching the movie of a novel than reading the novel itself. However, as it is obvious from the responds, reading still seems to be a popular free time activity.

20.7% (27 students) adore listening to music, a free time activity which always keeps its popularity, and has gained acceleration thanks to the new inventions, such as Mp3s. Finally few students prefer sleeping in their free time.

4.2.2. Questions 2 and 3: Have you ever played computer games? If so, how long have you been playing? How many hours a day do you play computer games? (Appendix D, Appendix E)

These questions were categorized according to the answers given by the respondents and coded. These categories are shown in the *Table 13* below.

(Table 13)

Categories about the Period They Have Been Playing PC Games in Terms of Years and Hours

Category 1	66.15% - Have never played
Category 2	33.8% - Have been playing for 5-8 years
Category 3	72.72% - Play PC games 2-4 hours a day
Category 4	20.45% - Play PC games 5-7 hours a day
Category 5	6.81% - Play PC games more than 8 hours a day

A great majority – 66.15% (86 students) have never played a computer game or have tried just for once or twice, considering computer games as a boring free time activity, whereas 33.8% (44 students) have been playing computer games with great enthusiasm and desire.

43.18% (19 students) of the respondents, who play computer games, has been playing computers games for a period between 5 and 7 years. 31.81% (14 students) of them has been interested in computer games for a duration between 2 and 4 years. Finally, the rest – 25% (11 students) has been playing these games more than 8 years.

72.72% (32 students) play computer, Xbox or PlayStation games for a period of approximately 2 or 4 hours a day, which could be accepted as normal. 20.45% (9 students) play PC games of a period between 5 and 7 hours a day, which is rather high. And there are three extreme students (6.81%) who play aforementioned games for more than 8 hours a day, which might not seem a bit too long.

4.2.3. Question 6: Do you read the demos and instructions while playing a computer game? Why / Why not? (Appendix F)

This question was categorized according to the answers given by the respondents and coded.

These categories are shown in the *Table 14* below.

(Table 14)

Categories about the Reasons Whether They Read the Instructions or not

Category 1	47.72% - Read the demos
Category 2	25% - Sometimes read the demos
Category 3	12.36% - Read the demos although they do not fancy them
Category 4	15.90% - Do not read the demos

47.72% (21 students) definitely read or watch the demos and read the instructions, because they think that they find clues / tips about the game and learn what to do while playing it. Demos and/or instructions help them to concentrate more and save time during the play. The following responses exemplify the points mentioned above:

Respondent 4:

Yes, because I can't go on the game. You have to understand them in order to go on.

Respondent 46:

One has to read the demos, specifically if playing a mission focused game. How can you learn your mission if you not read them?

Respondent 75:

Yes, I read because it saves time and I continue the game more faster.

Respondent 79:

Most of my friends don't enjoy to read the instructions, but I think they are wrong. Because when you read and understand the sentences, you also understand your missions, what to do and what not to do, so I don't lose points or get killed for nothing.

Respondent 81:

Yes, I do. Because I can concentrate more and better if I know my following steps.

25% (11 students) put forward that they sometimes watch the demos and read the instructions (Appendix F), depending on some reasons. The type or genre of the game is the distinctive factor here. They think that the instructions of a computer game which includes missions and goals should be read in order to proceed throughout the storyline. The sample responses below enlighten the points mentioned above:

Respondent 10:

*It depends on the game you are playing, I have to read the demos if I am playing a RPG game.
By that way I can only learn the clues about my mission.*

Respondent 57:

Not always, but if there is an important move to make, I have to, because without learning the next clue, sometimes it is meaningless to continue the game.

Respondent 107:

Sometimes yes, sometimes no, because in some games, I can't understand what to do if I don't read the demos.

12.36% (5 students) watch the demos and read the instructions although they do not fancy reading them a lot. Some of them claim that they would read the instructions provided that they are not too long. Others put forward that despite their unwillingness to read them, they at least have a quick glance on the instructions in order to perceive the big picture. The following responses exemplify the points mentioned above:

Respondent 68:

*Unfortunately, I have to read sometimes, especially if I play CRPG or adventure games.
Because there are hints about the next step.*

Respondent 84:

It changes according to the game I play. Understanding the stories help me to move on more carefully.

Respondent 96:

Learning about the game is sometimes beneficial, so I read most of the demos. But I like them if they are short.

Respondent 125:

Despite I don't want to, I do, because I can find some important points about the following paths.

15.90% (7 students) mentioned that they do not watch the demos and read the instructions at all, due to the fact that they think they are long, boring, time consuming and not very important. They prefer learning to proceed in the game on their own. The sample responses below enlighten the points mentioned here:

Respondent 30:

I can't read them, because I find them very boring. But sometimes some demos are only audial, so listening to them is easier.

Respondent 43:

They spoil my focusing on the game, so I don't usually read them.

Respondent 86:

I generally don't read them because they are time wasting.

Respondent 95:

No, I prefer learning while playing the game. Demos are boring. I generally watch the visual ones, they are a summary of the game.

4.2.4. Question 7: What are the components of a good game? (Appendix G)

This question was categorized according to the answers given by the respondents and coded.

These categories are shown in the *Table 15* below.

(Table 15)

Categories about the Components of a Good Game

Category 1	54.54% - Mentality and context
Category 2	34% - Technical features
Category 3	22.72% - Gameplay
Category 4	9% - Fun and amusement
Category 5	4.5% - Complexity

In the second part, it was intended to learn about their ideas what makes a computer game worth to play, so that the evaluation of the responds could be used while choosing the appropriate game for the study. According to them the components of a good PC game are several.

9% (4 students) of the respondents think that a good game should be funny and have amusing features. The following responses exemplify the points mentioned above:

Respondent 4

A good computer game should be funny. It must have amusing features, I should have fun while playing it.

Respondent 75

A good game contains a nice story, should make people have fun during the gameplay.

Respondent 84

Playing the game should be fun. Fun is the key component.

Two of the respondents put forward that a computer game should be complex, other two said that it should be popular, and another 4 considered that it should be different in order to be preferred. The following sample responses illustrate the ideas mentioned about this point:

Respondent 27

It must be complex. It must have a lot of details, like we have in real life. Life has hundreds of details to live in. If a game doesn't include these details, it doesn't look like real. Because life is complex itself. Otherwise it would be imitation. For example, when I want to create a character in a RPG game, I should decide even the skin colour, face impression and clothes of him.

Respondent 28

I prefer popular games, because I can find something to talk with my friends. When I hear about a popular game, I want to play it. Because if it is popular, it means that it is a qualified game with its story, effects and missions.

Respondent 30

*There are lots of similar games in the market; a good game should be different than the others.
It should be more creative and have a better story.*

Respondent 54

There must be different options each time I play the game. I must have the opportunity to play that game several times with different paths. It should react according to my decisions. That's why I like games like The Sims, World of Warcraft.

54.54% (24 students) of the respondents considered that the mentality and context are important, it should have a good story which could attract their attention and a very exciting flow which would make them play for hours. It should involve hidden things and should persuade the player to think. A gamer can be able to solve problems by using little clues, there must be racing, war, conquering, running away from the police and bad guys, finishing a combat, having several magical powers, fantasy, mostly adventure, fighting with enemies, saving hostages, trying to stay alive in a dangerous environment etc. The following responses exemplify the ideas mentioned about this point:

Respondent 8:

It should have a good story which attracts my attention, should have a very exciting flow, make me play for hours.

Respondent 10

The mentality of the game is important. I mean it must give me a good reason to play it. Childish stories don't attract me very much. The animations, story, characters, visual and sound effects should be in harmony and effective.

Respondent 34

There should be surprises within the story line. It should involve hidden things. I should get surprised while playing it in every step. If I know and realise the end of the story, I would be bored.

Respondent 43

Fantasy is the key component in a good computer game. I am bored with real life, people want to forget their problems which they live in real life, so a little bit fantasy would be nice.

Respondent 52

The game should be adventurous, I should feel excited.

Respondent 107:

What I like about a computer game is its being full of surprises. If I understand what is going to happen next, I don't want to continue. Surprising and unexpected next steps are interesting. The story writer must be very imaginative.

34% (15 students) of the respondents claim that technical features are important, such as graphics, visual and audio effects, style, colours, animation and simulations, and multimedia tools. These traits reinforce the realistic atmosphere of the game, deepens the intensity by

helping the gamers get immersed in the storyline as if they themselves experience everything in the first hand. The sample responses below put forward the ideas mentioned about this point:

22.72% (10 students) of the respondents consider that the gameplay which includes the tools required to facilitate a game would provide suitable conditions for the gamer to play the game more effectively. First of all, the player should be able to monitor the ongoing events on the screen and At this point, the artificial intelligence capability is very important, because they have a great passion for an interactive game which reacts according to different decisions taken throughout the story, and this can be only achieved by artificial intelligence usability. The sample responses below put forward the ideas mentioned above and some others about the gameplay:

Respondent 46:

A good game gives the player chance to control the game like he wants.

Respondent 58:

I should see all the multimedia tools and control buttons on the screen for fast control and actions. So one can change the settings easily.

Respondent 71:

It should provide easy keyboard shortcut usage. I must be able to control the game from the keyboard as well. Also navigation from the screen with the mouse is also important. The click buttons should be easy to use.

4.3. The Frequency of the Close-Ended Responds of Introspective Questionnaire

(Appendix I)

Depending on the frequency tables of the close-ended questions of the introspective questionnaire, 86.4% of the students prefer single-player games to multi-player ones, whereas 50% play multi-player games. Some negative factors such as paying an amount of money for online games, waiting in the queue on the Internet to be submitted into the game and the need of forming groups with other players might have affected their preference for single-player games.

A great majority of students 95.5% like playing role-playing games (RPG), which might be due to the fact that this kind of games feed their desire for fantasy-oriented game preference, provide highly-developed audio and visual effects, facilitate the gameplay on the edge and serve them intriguing open-ended stories that have different paths each time played as it is understood from the responds given in the Introspective questionnaire.

84.1% of the respondents also love playing action games. Strategy games come as the third preference with a rate of 63.6%, 31.8% play sport games, especially football tournaments, 36.4% again prefer race games, and finally first-person shooter (FPS) games come as the last with a rate of 27.3%.

In addition to these, most of them (88.6%) play computer games on their personal computers, while 43.2% also prefer PlayStation2 device. The other platforms such as PsP, Xbox and GameCube are preferred far less than the former ones with a rate of 6.8% each.

4.4. The Evaluation of Open-Ended Responds of Question 1 in the Retrospective Questionnaire (Appendix H)

This question was categorized according to the answers given by the respondents and coded. These categories are shown in the *Table 16* below.

(Table 16)

Categories about Whether They Think PC Games Improved Their Vocabulary Knowledge

Category 1	65.90% - Think that it has improved
Category 2	34.10% - Think that it has slightly improved

Within the scope of this question it was intended to learn their ideas about whether playing computer games had improved their vocabulary knowledge or not, and related to this lead them to put forward the reasons for this improvement. 65.90% of the participants in the experiment group absolutely think that after playing a computer game, they have learnt a lot of words. They considered that they had to look some of the words up in their dictionaries, if they wanted to proceed in the game or derived the meaning of a word by the help of visual effects and the story flow. The following responses exemplify the ideas mentioned about this point:

Respondent 5:

Playing computer games improves vocabulary level, because I like fun and I hate boring lessons. PC games are fun for me. I learn something without looking up to the dictionary. Pictures, animations and scenes (exciting and active) and characters help me understand the story. I didn't look up to the dictionary, but I know the meanings, because I followed the

instructions and I succeeded my missions. If I didn't understand them, I couldn't do the right things. So, it means I learned vocabulary, I can tell most of their meanings now.

Respondent 16:

It improved my knowledge because I looked a lot of words up on the online dictionaries to understand what to do in the game. So, I think I learned most of them. I can't say how many, but I know I have learned a lot.

Respondent 21:

I firmly believe that playing computers improve vocabulary knowledge, because you don't get bored while playing a game. It is fun and enjoyable, not like a boring lesson. Lessons sometimes can be fun too, but playing a computer game is not only fun, but also very exciting. You lose yourself within the game, and it motivates you to find the meanings of the game. So, now I know a lot of words now.

Respondent 30:

I believe that it has improved my vocabulary knowledge, because I am interested in scouting, outdoor sports and I am a member of Greenpeace foundation, and there are lots of web pages about these, now I can understand these and the newsletters which I receive from them better. I don't feel the need of looking them in a dictionary, I do so, but not as much as I did in the past.

Respondent 32:

I think it really improves my vocabulary knowledge directly, because I know that I have to look up the dictionary if I don't understand the words in an instruction and so if I want to go on the game. Sometimes I can know the meaning of the word from the story or the actions in the

game, which means I don't use a dictionary, but I guess it and go on, and mostly I succeed to achieve the mission. So I think, the meaning of that word was X and it is placed in my mind like that.

Respondent 35:

Yes, it did, because I started to understand what I am reading on the Internet better, I think. I don't stuck words as I did in the past. I continue reading faster.

34.10% also considered that their vocabulary had slightly improved despite a little hesitation. They are 100% sure it has improved their acquiring a set of vocabulary, but suppose that it has done so due to several reasons. First of all, they couldn't express themselves accurately and fluently in the past while speaking or writing about something. They claim that they still have problems in doing so, however, the people whom they utter can now understand what they intend to transfer at least. They can understand what they read on the Internet or on their favourite magazines a little bit better.

Secondly, they mentioned that some of them started to get higher grades in their Advanced Reading and Speaking lesson (9052031) due to having prepared better projects, reports and presentations, a positive progress which they suppose on account of the fact that their homework is adorned with more advanced words. According to them, despite grammatical mistakes, their teachers might have approved the usage of words in the correct place at least and this might have caused them get better grades. In fact, the point which they were not aware was that words are the key to accessing background knowledge, expressing ideas, and to learning about new concepts. Their word knowledge is directly linked to their success in

academics. Children who know the meaning of most of the words that they hear or read are able to better comprehend than those who do not.

Thirdly, some of them realised that they happen to know more words than their peers do and they do not stuck into words and pause while speaking as they used to in the past. This is a very normal outcome as students who have more word knowledge read more and understand more, on the other hand students who lack word knowledge read less and understand less. The sample responses below put forward the ideas mentioned above and some others on this topic:

Respondent 2:

It must have improved my vocabulary knowledge, because I couldn't speak or write very well in the past. I still make grammar mistakes, but I can use good vocabulary to write an essay or while speaking, so people can understand me at least.

Respondent 4:

It improved my vocabulary a little bit I think, because I can understand what I read in the internet more easier.

Respondent 9 :

It improved I think, because it reinforced my vocabulary knowledge. You see, even here I used a word that I learned from the game – “reinforced”.

Respondent 12:

Yes, I think it did, because in the past I didn't used to understand the songs I listened to very much. Now I can understand the main idea they want to imply. I want to say something

interesting, that is; in some kinds of music, I think the stories are the same with RPG computer games, because I can see many same words in their lyrics as well, for example especially hard rock, trash and underground songs.

Respondent 18:

I think it improved, since I know some words which my friends don't know now. Sometimes I tell them the meaning of some words which I remember from computer games while we are watching a movie or reading something, and they are surprised. I feel superior to them and sometimes make show-off.

Respondent 25:

I have never thought whether it improved my vocabulary knowledge or not, but it has I suppose. Because I realised that I can communicate with people more fluently nowadays, because I am not stuck in words. I don't pause to find the correct word. Maybe I don't place it in the correct place, but I think I am more successful now in expressing myself.

Vocabulary development is the glue that holds fluency together. [Fluency](#) has been defined as the freedom from word identification problems that might hinder [comprehension](#) (Pikulski, & Chard, 2005). This definition explains that fluency includes comprehension as well. A fluent reader is one who is efficient and uses effective word recognition skills to help make meaning of the text that they are reading. The [National Reading Panel](#) describes fluency as the ability to read a text quickly, accurately, with proper expression, and meaning (Ellery, 2005). The National Reading Panel also identifies vocabulary as one of “[The Big Five](#)” of reading. The denser the number of unknown words, the more difficult to assign a meaning to them, and it is

harder to get meaning from text (Zutell, 2006). As they have learned plenty of words during the gameplay, it is not very surprising for them to start to comprehend what they read better.

4.5. The Frequency of the Close-Ended Responds in the Retrospective Questionnaire

As a result of the evaluation of the close-ended responds in the retrospective questionnaire the following findings were configured.

4.5.1. I started to understand the game instructions properly.

(Table 17)

The Frequency about the Comprehension of the Game Instructions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	71,4	71,4	71,4
	No	10	28,6	28,6	100,0
	Total	35	100,0	100,0	

As it is understood from the *table 13*; 71.4% of the respondents think that after playing computer games for a period of time, they started to understand game instructions properly. That might of course be because of getting used to the typical statements which are given at the beginning of PC games, however, in the game *Oblivion*, the producers didn't use similar instructions. Besides they provided the gamers different ones depending on the paths they chose and decisions they made throughout the game. Thus, there must be another reason for this result.

This might be on account of the fact that as they played the game, they learned a great number of words since they had to find out the meaning of the unknown words by looking them up in the dictionary so as to continue the game. Otherwise, they wouldn't be able to understand their missions, and without comprehending the instructions, it is impossible to maintain a meaningful progress within the story. As a result, they must have acquired enough words to understand the instructions by time.

Furthermore, it should be mentioned that it must be easy to comprehend the meaning of the instructions in such a game, where there is a story flow. Being immersed in a storyline, accompanied with background information and visual aids might also have been facilitators for them to start to understand the instructions better. Multiple meaning words are generally difficult to learn. The good part about computer games is a word may be used with its slightly different meanings in the storyline. This helps students develop a deeper and more accurate understanding of word meaning (McCormick, 2003). One of the best ways to introduce vocabulary is to do it in context; students need to link the new word to a concept to help them understand that meaning of the word.

4.5.2. I can understand the movies I watch better.

(Table 18)

The Frequency about the Comprehension of the Movies they Watch

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	61,4	61,4	61,4
	No	17	38,6	38,6	100,0
	Total	44	100,0	100,0	

61.4% of the respondents which might be accepted as a respectable majority claim that they can understand the movies they watch better than they used to do in the past. This might be due to several reasons. First of all, they kept playing an interactive game which consisted of highly-creative multimedia tools adorned with latest visual and audio effects, 3 dimensional screen shots with deeper intensity and perspective, and a fast-speed storyline. All of the aforementioned features create a similar environment the same as a movie screen.

Secondly, they chatted with the other characters when it was necessary, so they had to focus on what the others replied in order to understand what they said. They might have become talented to understand what they hear from the characters while watching them on the screen, since the characters are absolutely realistic, even their lip movements.

Finally, vocabulary learning is highly the most acceptable possibility. Apart from the features mentioned above, they started to comprehend what they watch on TV or at the cinema due to the fact that they have learnt plenty of advance level words. Lexical improvement is of course not enough to comprehend the meaning of an utterance; grammatical competence and being used to different accents and pronunciations are also key factors to comprehend what someone says. Despite these core points, having improved lexical knowledge still eases the comprehension of what is watched, at least deriving the intended meaning by just catching some of the words within the context.

4.5.3. I can understand the foreign songs I listen to better.

(Table 19)

The Frequency about the Comprehension of the Foreign Songs They Listen to

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	20,5	20,5	20,5
	No	35	79,5	79,5	100,0
	Total	44	100,0	100,0	

As it is understood and expected from the *table 15*, only 20.5% of the respondents put forward that playing computer games doesn't have a meaningful effect on the comprehension of what they listen to. They might not understand the things that they listen to clearly because listening to songs is not exactly like watching a movie. There are not many supplementary helpful features that facilitate the comprehension, such as an obvious storyline where they can predict the main idea from the context or a visual aid that creates a mnemonic in their minds to fill in the missing points in understanding a sentence, a clause or even a phrase. Thus, gaining a new set of vocabulary might not work at this point when it comes to comprehend the meaning of the lyrics they listen to.

Moreover, lyrics are mostly written without the anxiety of grammatical accuracy and most of the time words are used with their second or even third meanings apart from their literal meanings. Here, the main objective is to match the number of syllables with the number of beats of the melody, so sometimes meaningless statements can be seen in the lyrics. One can also come up with some problematic sentences full of haplogies, homographs or spoonerisms which might cause misunderstanding. The type of the songs vary a lot, from chants, carols,

hymns, oldies and madrigals to popular music, such as rock, underground, dead, trash or protest. These are the possible reasons for them not to understand what they listen to clearly enough.

4.5.4. I can understand the books, magazines, e-mails etc. I read better.

(Table 20)

The Frequency about the Comprehension of the Books, Magazines etc. they Read

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	61,4	61,4	61,4
	No	14	38,6	38,6	100,0
	Total	44	100,0	100,0	

The figure seen in the *table 16* was an expected result, 61.4% of the participants in the experiment group considered that playing computer games has a meaningful effect on comprehending the books, magazines, e-mails etc., on account of the fact that deriving the main idea of an extract mostly depends on vocabulary knowledge. If the students do not know the meaning of turning point words within a text, they have difficulties to comprehend the intended message. This problematic point doubles if they are not competent on the techniques beneficial in predicting the meaning of a word. Thus, having acquired an admirable number of words, they might have come over one of the key factors in comprehending a text.

As it is obvious, there are surface and deep structures in semantic analysis. At the surface level, denotative meaning is the meaning of words given in the dictionary and is “integral to the essential functioning of language in a way that other types of meaning are not” (Leech, 1981). The participants’ vocabulary learning might have accelerated because they had to look up most

of the words in a dictionary so as to comprehend what their missions were and proceed in most of the games. In the deep level, they also gained the contextual meaning of words, since it is realised at the sentence level and the meaning is expressed by instructions associated with their context in the game. Both denotative and contextual meanings call for cognitive ability on the part of the readers who play computer games.

4.5.5. The frequency of using the dictionary has decreased.

(Table 21)

The Frequency about the Dictionary Usage

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	24	54,5	54,5	54,5
No	20	45,5	45,5	100,0
Total	44	100,0	100,0	

54.5% of the participants in the experiment group think that they started to use dictionary less frequently. Thus, this result reinforces the previous item # 4, as well. Dealing with computer games for a period of time led to vocabulary learning with both the denotative and contextual meaning and this resulted in comprehending a text they read better. Related to this, they might be using dictionary less frequently.

4.5.6. I can express myself better.

(Table 22)

The Frequency about How Well They can Express Themselves

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	27,3	27,3	27,3
	No	32	72,7	72,7	100,0
	Total	44	100,0	100,0	

I can communicate with foreigners better.

(Table 23)

The Frequency about How Well They can Communicate with Foreigners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	25	25	25
	No	33	75	75	100,0
	Total	44	100,0	100,0	

Items # 6 and 7 were asked to cross check their ideas about the efficiency of vocabulary learning via computer games on their communication ability. Only 27.3% of the participants put forward that playing computer games have a significant effect on expressing themselves. 75% of the participants also considered that vocabulary learning via computer games hasn't accelerated their communicative competence with foreigners. This might be due to the fact that acquiring a set of vocabulary is not enough to speak properly. Reading a text is a receptive skill which is much easier and most of the time just vocabulary knowledge might help to comprehend the meaning. However, speaking is a productive skill and requires someone to be accurate in grammar, proficient in fluency and competent in pronunciation apart from knowing

a good amount of vocabulary, even the mood the speaker in at the moment of speaking might affect the productivity of him.

On the other hand, Richards (2000, xi) claims that lexical competence is the heart of communicative competence and states that vocabulary and lexical units are at the heart of learning and communication. According to him, no amount of grammatical or other type of linguistic knowledge can be employed in communication or discourse without the mediation of the vocabulary. Although Richards puts the lexical competence in the heart of communicative competence, the participants here might still be feeling themselves lack of speaking ability due to the aforementioned reasons in the first paragraph.

Vocabulary not only affects reading ability but also [listening, speaking and writing](#) abilities. There are 4 different types of vocabulary that every reader should possess to be a fluent reader. A reader must be able to understand words that are spoken which is their listening vocabulary. They must also be able to speak using an extensive vocabulary which is their speaking vocabulary, and write using an expansive vocabulary which is their writing vocabulary. Finally, they must be able to understand what they read which involves a reading vocabulary. Where vocabulary instruction once was simple, it now carries over into all aspects of language instruction. This is why vocabulary is now considered a key component in a well rounded reading program (McCormick, S., 2003).

DISCUSSION

The post-test success mean of the experiment and control groups indicates that the experiment group and control group have no significant difference in acquiring a set of vocabulary. It seems that both groups performed an improvement while learning the target words, but in different ways.

The students in the control group were limited with the lesson book in the classroom environment such as the typical warm-up, skimming, scanning, doing the vocabulary exercises and answering the comprehension check questions activities. These might have caused boredom and leaded the students lose interest in the reading text, however, creative and motivating efforts of the lesson teacher who used lots of extra materials and visual aids such as photos, maps, leaflets, posters, overhead projector helped them to perform an appreciated progress in learning new words.

The experiment group didn't attend the lessons during the term and learn the target vocabulary as the subject of a lesson, however, showed a meaningful progress as much as the control group. They dealt with an activity which they already enjoyed very much. They never felt boredom, due to the fact that they were immersed in a virtual world of a story which was given within a movie-like context and adorned with visual aids of a three-dimensional world and sound effects.

However, we came up with a result that there is no significant difference between the experiment and control groups in learning a new set of vocabulary. The present study obviously shows that computer games are not a definite positive factor to help learners to learn

a new set of vocabulary, but at least it is a factor in doing so. Thus, it has been understood that computer games can only be a supporter to the in-class learning or can be implemented into the curriculum as a “blended learning” method. Depending on the students’ responses to both of the questionnaires, it could also be said that it is appreciated by the participants.

Computer games especially designed for educational purposes can be implanted within the school curriculum to increase the interest and attract the attention of the students in order to motivate them in any lesson. If one wanted to educate children – especially about simple content knowledge- he could take advantage of their game-playing free time. The question here is to find the key factors to adapt computer games into education. Thomas Malone (1983) launched a field of inquiry when he asked the question, “*How can the same things that make PC games captivating be used to make learning with computers more interesting and enjoyable?*”

We should also be careful about the diversity among players, since some games will appeal to one that will not appeal to another. Educational information should be repeated throughout several different types of experiences, so that all type of players can be reached with educational information. Revision in different strategies throughout the game ensures that the users will be exposed to critical information regardless of paths chosen. It can reinforce what is learned or help students learn content in different ways. Variety can be introduced by offering changing content or updated games, which is easy to do in Internet based games. This variability keeps them returning to games over and over.

Computer video games are an emerging instructional medium offering strong degrees of cognitive efficiencies for experiential learning, team building, and greater understanding of

abstract concepts. However, there are a few negative aspects about computer games. Rice (2007) made a broad analysis of current research dealing with the educative impact of computer video games in the classroom, with a focus on these barriers to implementation. His study was a qualitative review of several scholarly papers exploring the use of computer video games in the classroom, which led to six major barriers that included negative perceptions toward video games as educational components; the difficulty of providing state of the art graphics in educational video games; a lack of adequate computing hardware in the classrooms to run advanced video games; a school day divided by short class periods which hindered long term engagement in complex games; a lack of real world affordances; and a lack of alignment to state standards.

Teachers' decisions and attitudes about using and adjusting technology in the classroom setting, and their perceptions of technology use are the leading negative factors which should be taken into account if there is an intention of implementing computer games as a part of curriculum. [Baek, Jung & Kim](#) (2007) surveyed the aforementioned points and discovered six factors which influenced teachers use technology in their classroom: adapting to external requests and others' expectations, deriving attention, using the basic functions of technology, relieving physical fatigue, class preparation and management, and using the enhanced functions of technology. They also analyzed the patterns of factors' scores by teachers' level of teaching experience and came up with the results that experienced teachers generally decide to use technology involuntarily in response to external forces while teachers with little experience are more likely to use it on their own will.

Zhao (2007) indicates that teachers held a variety of views which influenced their use of technology in the classroom. They conducted a qualitative research to investigate the

perspectives and experiences of 17 social studies teachers following technology integration training. The results showed that most teachers were willing to use technology, expressed positive experiences with technology integration training, increased their use of technology in the classroom, and used technology more creatively. Another study which focused on instructors' and learners' attitudes toward e-learning usage was conducted by [Liaw, Huang & Chen](#) (2007) among 30 instructors and 168 college students asking them to answer two different questionnaires for investigating their perceptions. The findings were that instructors have very positive perceptions toward using e-learning as a teaching assisted tool. Regarding learners' attitudes, self-paced, teacher-led, and multimedia instruction are major factors that affect learners' attitudes toward e-learning as an effective learning tool. As it is understood, teachers are generally willing to integrate technology into their classroom settings. However, all the examples mentioned above are related with teachers' perceptions on the formal use of technology. A great majority of the educators - even the aforementioned eager ones - might not share the same ideas about computer games since they would be accepted as informal way of teaching.

Nevertheless, meaning making in new media presents new opportunities and challenges for those working in formal and informal educational contexts. Merchant (2007) examined what is meant by digital literacy and how it differs from traditional print literacy. He claims that written representation will continue to be important, but digital literacy will continue to develop distinct registers as future trends in digital communication. Computer games will be one of the leading technological but informal aspects keeping students' motivation high and facilitating their learning at most.

Another barrier is the physical conditions and requirements so as to implement computer games into the curriculum of a school. An educational organization needs a combination of significant traits, such as a well-equipped technology class or laboratory, an effective network system and server capacity, and more. The researcher in this study was fortunate to conduct his research at a technical university where CISCO (a private network company) supported many of the institutional projects and set up an excellent computer lab. Related to this, he didn't have to wonder about providing an environment to his subjects where he could also monitor and keep them under control. However, this might not be the case in many schools as it is seen in the study by [de Fatima D'Assumpcao Castro & Alves \(2007\)](#). They investigated the impact of the implementation and use of computers in the public school system, from the elementary grades to high school, in Niteroi city, Rio de Janeiro, which was chosen because it offers the best educational project in Brazil and it is ranked as the first city in terms of digital inclusion in the state of Rio de Janeiro according to IBGE--Brazilian Institute of Statistics and Geography (Census 2000). They found that 82% of the municipal elementary schools have computer laboratories, however, difficulties were observed, such as the adequacy of teachers' training and continuing education, computer laboratory schedule, number of computers available, and equipment maintenance.

Despite huge investments that schools make for the implementation of technological innovations, technology integration is a demanding issue and this puts more burdens on schools. Gülbahar (2007) conducted a study to illustrate how technology planning process was carried out in a private K-12 school in Turkey. Data were collected from 105 teachers, 25 administrative staff, and 376 students. Teachers and administrative staff were asked to fill out a questionnaire to gather data on their perceived computer literacy, issues related to ICT usage. Students were also asked about their perceptions on the current utilization of ICT at

their school. Findings indicated that even teachers and administrator staff felt themselves competent in using ICT available at the school. On the other hand, students reported that ICT is not utilized sufficiently in their classes.

The organizations perceptions are another barrier in providing the appropriate environments to permit the educators implement such technological innovations into the curriculum. Faculty roles and the processes of teaching and learning are undergoing rapid change. The three traditional roles of college and university faculty are teaching, research, and service, with the relative emphasis on each varying by institutional type and mission. Among the three roles that are undergoing change, teaching and research are being most significantly altered by technology. Although research and publication are undeniably important components of the professional lives of many faculty members--for some, they form "the" most important component--, we should focus on the less-visible changes brought about by technology in the teaching and learning space and on how these changes are fundamentally reshaping the processes and tools associated with the institutional structures, extending to the roles and responsibilities of campus IT leaders and organizations.

As a post-modern culture, we have come to define the world around us through the discursive relationships between language, history, ideology and narrative discourse, yet advances in technology have now begun to allow us to express those narratives in new and different ways. For the first time in our careers, as faculty members we are expected to teach in ways that differ from how we were taught when we were students.

Educational software games aim at increasing the students' motivation and engagement while they learn. However, if software games are targeted to school classrooms they have to be usable and likeable by all students. Usability of virtual reality games may be a problem

because these games tend to have complex user interfaces so that they are more attractive. Moreover, if the games acquire an educational content they may lose the attractiveness and appeal that they have on users who are familiar with commercial games (Virvou & Katsionis, 2008).

Interactions of written literature, visual aesthetics and participatory action are the traits that typify many computer games today. Diana Philips Mahoney – chief technology editor of *Computer Graphics World*, discusses the impedance of the interaction and balance between "story" and "graphics" in interactive fictional environments, particularly computer game environments. She writes, "3D graphics adventures are sustained not by their visuals, but by the *stories* the visuals help to tell." (Sexton, 2002). This means that we can make use of this type of narratives while teaching our students new vocabulary with last version of multimedia tools which are meant to create a more three dimensional effect and to produce a more intense and realistic feeling of immersion.

Virtually all PC games are goal-driven, so they require the participation of the gamer to transform the story frame into a complete narrative. We should not forget that a gamer is also a reader, a viewer and a player.

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http://en.wikipedia.org/wiki/Official_Xbox_Magazine

<http://en.wikipedia.org/wiki/X-Play>

<http://en.wikipedia.org/wiki/Eurogamer>

APPENDICE

APPENDIX A

The Introspective Questionnaire

Name / Surname :

ID Number :

Department :

- 1- How do you spend your free time?
- 2- Have you ever played computer games? If so, how long have you been playing?
- 3- How many hours a day do you play computer games?
- 4- What kind of computer games do you prefer?

	YES	NO
Single Player	☐	☐
Multi Player / Online	☐	☐
Sports	☐	☐
Race	☐	☐
Action	☐	☐
FPS	☐	☐
RPG – Role Play	☐	☐
Strategy	☐	☐

5- Which of the following devices do you prefer while playing computer games?

	YES	NO
PC	☐	☐
PS2	☐	☐
PsP	☐	☐
Xbox	☐	☐
Gamecube	☐	☐

6- Do you read the demos and instructions while playing a computer game? Why / Why not?

7- What are the components of a good game?

APPENDIX B

The Retrospective Questionnaire

Name / Surname :

ID Number :

Department :

1. Do you think in any ways that playing computer games has improved your vocabulary knowledge?

2. If so, put a cross into the boxes next to the statements below that helped you to realise the improvement in your vocabulary learning?

- I started to understand the game instructions properly. ☐
- I can understand the movies I watch better. ☐
- I can understand the foreign songs I listen to better. ☐
- I can understand the books, magazines, e-mails etc. I read better. ☐
- The frequency of using the dictionary has decreased. ☐
- I can express myself better. ☐
- I can communicate with foreigners better. ☐

APPENDIX C

The Responds of the First Open-ended Question in Introspective Questionnaire

The responds are given as the respondents replied the question without correcting the grammatical or lexical mistakes.

1	Watch movies, especially horror and play playstation games
2	No free time
3	I prefer reading books most of the time, it is relaxing. I forget about boring lessons.
4	Like playing PC games, watching adventure movies and listening to Rock music
5	Play football and basketball
6	I play Xbox games and surf in the Internet
7	Reading magazines
8	Watching films and documentaries, playing computer games
9	Listening to music, watching films
10	PC and play station 2 games, listening to music, reading car magazines
11	I usually go out and meet my friends in Taksim and Ortaköy
12	I like listening to music, but traditional folk music
13	Watch CNB-C serials , X-files, Buffy Slayer, Scrubs etc., playing PC games
14	Playing football and watching matches of the best team – CİMBOM in the stadium
15	Listening to music and reading fashion magazines
16	I like Jogging and fishing
17	I like watching movies at the cinema, but it is expensive. I also play RPG games on the computer.
18	I love doing any kinds of sports in my free time
19	Chatting with my friends and reading books
20	I mostly watch TV, and mostly action movies
21	Watching movies, magazine programmes
22	Sleeping
23	I mostly listen to a lot of music, watch comedy films and cook
24	I do body building and watch action movies in my free time

25	I like going out and travelling
26	Watching films with my boy friend
27	I play computer games mostly and surf on the net
28	Playstation games
29	I like reading romance novels by Barbara Cartland and adventure ones by Wilbur Smith
30	Play PC games with my friends
31	Reading and listening to music are the best free time activities for me
32	Chat with my friends, watch science fiction movies
33	Prefer spending free time by reading interesting books
34	I always play games on the computer, because it is relaxing.
35	I like online computer games, but I don't pay them much money.
36	I go trekking and rafting
37	I have not free time
38	Watching movies, but at home, on my comfortable sofa
39	Play computer games and watch science fiction films
40	Reading, listening to music, sometimes going to the cinema and theatre
41	Reading and walking in the forest
42	Stories about ancient world attract my attention a lot, so I read whatever I find about them.
43	I sometimes play games on the computer, sometimes chat with my friends on the Internet or read books
44	Eating and drinking with my friends
45	Watching movies, playing Xbox games
46	I mostly play PC games, but seldom go out to see my friends
47	I wonder around with my boy friend, he is very relaxing
48	Reading
49	Read books and newspaper, solve puzzles in my free time, play games in my computer
50	Movies
51	Playing PC games
52	Computers games and Internet
53	Travelling
54	I play football in Kireçburnu Football Team
55	Read books, go swimming and going to different places
56	I most of the time sleep. Sleeping is the best free time activity.

57	I like watch movies very much and playing computer games
58	I generally read books when I have free time
59	Listen to Tarkan, Serdar Ortaç, read comic magazines
60	Driving in the countryside
61	Reading a book every week and watching a movie every month
62	Spend my time mostly watching movies
63	Climbing, canoeing, scuba-diving, all the outdoor sports and of course FOOTBALL
64	I have no free time
65	I and my girlfriend usually go to the cinema or concerts.
66	I work for the “Hayvanları Koruma Derneği” in my free time. I have 3 dogs and 2 birds, I like animals very much. I also play computer games very much.
67	Playstation games, Xbox games, PC games, Multi and single player games. I also go to a café in Kadıköy to play card FRP games with our friends.
68	Watch historical and dram films, playing fantasy role computer games
69	I like reading books, especially before I go to sleep
70	Girls
71	I have free time, but I don't have a specific free time activity. I sometimes go walking and meet my friends. Maybe playing PC games rarely.
72	I read books, watch cartoons, listen to foreign music
73	Meeting my friends, watching films at the cinema, playing football
74	Reading newspapers, surfing on the Internet are free time activities for me
75	Play computer games, read books
76	I like playing football and watching movies and playing FPS games on the computer.
77	Reading I can say, and single-player games
78	Just staying at home or sleeping and relaxing
79	I read a lot and play computer games
80	Prefer to spend my free time by watching movies
81	Usually listen to music, often read books, sometimes play games on the computer, rarely go running
82	I read books most of the time, but I also like watching films at the cinema
83	I generally meet my friends from the neighbourhood and chat at the café at the corner of our street. We talk about lots of things and drink something. We sometimes play Okey and Batak.

84	Reading and play Pc games
85	I generally watch movies and read books, furthermore I play bowling the first Sunday of each month with my cousins in Galleria shopping centre
86	I dream mostly about future and spend my time playing PC games.
87	Going to gym, playing basketball, going to Efes Pilsen matches, watching movies
88	I used to read books and watch movies very much, but now computer games (games) are my favourite activity in my free times.
89	I lie down and relax.
90	I play PC games, mostly on Playstation 2
91	Like movies and computer games
92	-----
93	I read long novels, if they are not boring
94	I love surfing in the internet a lot. I spend most of my time there, in the virtual world.
95	I usually play Xbox games, but when I am not with my girlfriend
96	I like dancing but I don't like going to the discos. I also love listening to fast rhythm songs, Hip Hop, Rock, Techno, Rap and Karadeniz Traditional folk music. I sometimes play computer games in my free time.
97	Listening to classical and protest music, going to the cinema
98	I love reading books and going to romantic movies, but my boyfriend doesn't like, so we always go to a café around the city.
99	I like sunbathing and reading a nice book under the sun.
100	Watch cinema and especially love playing Playstation games.
101	I always study English. No that is a lie of course. In fact I don't like English lessons, they are boring. But I like watching foreign action films. Van Damme is my favourite actor. Also computer games.
102	Swimming, maybe walking
103	I meet my friends, go shopping and read books
104	I have only one hobby = putting my legs on the sofa and relaxing
105	If I have free time, I watch comedy-romance movies
106	Read and play games in my computer.
107	In my free time I usually play a game on the computer or watch a documentary on Discovery Channel.
108	I go to school.

109	I watch films late at nights, play football on the carpet pitch every Friday evening, have big breakfasts with my family on Sundays, meet my friends mostly in Taksim, play football games on computer bla bla ...
110	Go walking by the seaside in Çengelköy, eat something in Kanlıca
111	I usually reading books in English not to forget my English
112	I listen to music and read a lot. I also like playing single-player games at home.
113	DVDs and Home Theatre systems are the most important inventions of this century. Thanks to them we can watch very nice movies without going to the crowded cinema halls. I have a great collection of DVD films, of course most of them are fake.
114	I read a lot, sometimes my eyes hurt
115	I hate free times, because I don't have anything to do in free times.
116	I play single-player computer games, I don't play multi-ones, because I like spending time on my own. I also like watching movies and reading books about history.
117	I love filling in questionnaires
118	Anything about love, romantic movies and books, slow music and peaceful parks
119	Play games on Xbox or multi-play games with friends
120	Watch movies
121	Reading
122	Mostly read this and that, sometimes play PC games
123	Reading is my favourite free time activity
124	Playing tennis and volleyball, going to football matches
125	I play pc games in my free time.
126	Read books of course
127	-----
128	Cook and eat
129	I only swim in Acarlar Gym Centre every weekend
130	Reading magazines like Newsweek, Times, National Geographic etc.

APPENDIX D

The Responds of the Open-ended Question 2 in the Introspective Questionnaire

1	6 years
2	-----
3	No
4	Yes, for four years.
5	I don't like computer games.
6	Yes – since 1997
7	No, I haven't.
8	Since I was born
9	Very little, I can say no.
10	Yes, for 4 years
11	I don't prefer computer games.
12	No, not yet.
13	About 4 years
14	No, I haven't.
15	No
16	Not, I haven't.
17	8 years
18	No, I have not and I do not think so to play from now on.
19	Not much
20	No, I haven't.
21	No
22	-----
23	No and I can't understand the people who like playing them. Listening to music is much more enjoyable.
24	No
25	No, I haven't, but I want to one day.
26	No, I haven't.
27	I must have played for about 8 years approximately
28	Yes, 3 years

29	No, I haven't.
30	Yes, for 2 years, after my small brother bought playstation.
31	Once or twice
32	-----
33	No, I haven't.
34	Yes, 6 years
35	Must be for six years
36	No, I haven't.
37	No, I haven't.
38	No
39	For about 5 years
40	Not yet
41	No, I haven't.
42	No, I haven't.
43	I don't remember
44	No
45	5 years
46	Yes, for 6 years
47	I dislike computer games, but my boyfriend likes them a lot.
48	No, I haven't.
49	It must be nearly 4 years
50	No
51	I have been playing since I came to Istanbul, 2 years ago.
52	Yes, for 9 years
53	No, I haven't.
54	No, I haven't.
55	No
56	No, I haven't, I can't sit in front of a PC so long. Lying down is the best policy.
57	Yes, since 7 years
58	I suppose for nine year
59	No, I haven't.
60	No, I haven't.
61	No, I haven't.

62	No
63	No, I haven't.
64	No
65	No, I haven't.
66	No, I haven't.
67	Yes, I have been playing for 10 years
68	For many years
69	No, never and will never
70	No, I haven't.
71	I think for about 5 years
72	No, but maybe one day
73	No, I haven't.
74	No
75	I didn't count, but should be for 9 years, a long time
76	Yes, for 7 years
77	3 years
78	No, I haven't.
79	Yes, for 4 years
80	I haven't.
81	Just a year, started to play last year
82	Not
83	No, I haven't.
84	Yes, for nearly 5 years
85	No, I haven't.
86	I don't know, maybe 3 years
87	No, I haven't.
88	Yes, since I was a child
89	I haven't yet
90	For 6 years
91	I have played since 4 years
92	No, I haven't.
93	No
94	No

95	Yes, for two years
96	Yes, 5 years I have been playing
97	No, I haven't.
98	Not yet
99	Have played one time, didn't like it.
100	Yes, since nearly 7 years
101	7 years
102	No, I haven't.
103	No
104	-----
105	-----
106	5 years must be
107	Yes, since 5 years
108	No, I haven't.
109	8 years
110	I didn't play.
111	No, I haven't.
112	I have been playing since 5 years
113	No, I haven't played so far, but want to. I adore my friends when I see them very excited, they seem to enjoy a lot.
114	No, I haven't.
115	No, I haven't.
116	Yes, nine years.
117	No
118	No, I haven't.
119	Played for 3 years
120	No, I haven't.
121	No
122	No, I haven't.
123	No, I haven't.
124	I haven't ever played
125	For 7 years
126	No

127	No, I haven't.
128	-----
129	No, I haven't.
130	No

APPENDIX E

The Responds of the Open-ended Question 3 in the Introspective Questionnaire

1	Three hours
2	-----
3	-----
4	More than one hour
5	-----
6	Nearly all day long when I am at home
7	-----
8	For 4 hours
9	-----
10	About 5 hours
11	-----
12	-----
13	About 2 hours
14	-----
15	-----
16	-----
17	Not much, just 2 hours
18	-----
19	-----
20	-----
21	-----
22	-----
23	-----
24	-----
25	-----
26	-----
27	I play for 5 or 6 hours, I am an PC game addict.
28	For three hours
29	-----

30	5 hours
31	-----
32	-----
33	-----
34	Sometimes 4, sometimes 5 hours
35	I usually play 3 hours
36	-----
37	-----
38	-----
39	I used to play a lot when I was at high school, but now I just play 2 or 3 hours
40	-----
41	-----
42	-----
43	4 maybe
44	-----
45	I play nearly 5 hours, I know too much, but can't pause when I start to play.
46	About two hours
47	-----
48	-----
49	It must be 1 hours because of projects and exams.
50	-----
51	2 hours
52	I play about three hours
53	-----
54	-----
55	-----
56	-----
57	Generally 4 hours
58	You won't believe it, but 7 hours, sometimes 8 hours at weekends.
59	-----
60	-----
61	-----
62	-----

63	-----
64	-----
65	-----
66	-----
67	For 5 hours
68	For two hours
69	-----
70	-----
71	I think for about 3 hours
72	-----
73	-----
74	-----
75	8 hours, sometimes till morning
76	I play for 4 hours
77	Usually 5 hours
78	-----
79	It changes, but about 2 hours
80	-----
81	Not much, 1 or 2 hours
82	-----
83	-----
84	Play for 6 hours, it's long but you don't understand how time passes
85	-----
86	For 4 hours
87	-----
88	If I have time, I play as much as I can, about 7 hours, 8 hours
89	-----
90	For 3 hours
91	I don't play more than 3 hours
92	-----
93	-----
94	-----
95	Maybe for 4 hours

96	For 2 or 3 hours
97	-----
98	-----
99	-----
100	I think it depends on my mood, but I can generally play 3 hours
101	Five hours
102	-----
103	-----
104	-----
105	-----
106	2 hours
107	Perhaps I play for 4 hours
108	-----
109	I play three hours of computer games.
110	-----
111	-----
112	For 2 hours
113	-----
114	-----
115	-----
116	I play for three hours
117	-----
118	-----
119	I have been playing nearly 2 hours, but not every day
120	-----
121	-----
122	-----
123	-----
124	-----
125	For three hours
126	-----
127	-----
128	-----

129	-----
130	-----

APPENDIX F

The Responds of the Open-ended Question 6 in the Introspective Questionnaire

1	Sometimes I read the instructions, especially when I start to play a game for the first time.
2	-----
3	-----
4	Yes, because I can't go on the game. You have to understand them in order to go on.
5	-----
6	I mostly do not read. I sometimes fail to finish the quest because of not reading , but I mostly race games or strategy games which do not have much instructions, so I don't need them.
7	-----
8	If they aren't too long, yes I read.
9	-----
10	It depends on the game you are playing, I have to read the demos if I am playing a RPG game. By that way I can only learn the clues about my mission.
11	-----
12	-----
13	Yes, I do, to understand what is going on.
14	-----
15	-----
16	-----
17	Yes, I must already read them if I hope to find a solution or make a strategy to come over a mission in the game.
18	-----
19	-----
20	-----
21	-----
22	-----
23	-----
24	-----

25	-----
26	-----
27	I normally hate reading something, for example I don't read newspapers, but read them on the net. But when playing a game, I can't play it without reading the demos, because they are the skeleton of the story.
28	Yes, I read them most of time.
29	-----
30	I can't read them, because I find them very boring. But sometimes some demos are only audial, so listening to them is easier.
31	-----
32	-----
33	-----
34	Not always, however, if I play a game with a story I of course read them. Because noone can play without understanding his goals in the play.
35	Yes, while playing multi-player games or online games, I don't feel the necessity very much, because I can talk – chat – with other players and learn what to do. But if I play a single-player game, I read.
36	-----
37	-----
38	-----
39	I used to read in the past when I started to play games, but now I don't because I find them very very bored.
40	-----
41	-----
42	-----
43	They spoil my focusing on the game, so I don't usually read them.
44	-----
45	Yes
46	One has to read the demos, specifically if playing a mission focused game. How can you learn your mission if you don't read them?
47	-----
48	-----
49	Yes, I read. It is nearly impossible to find the secrets or get your instructions without

	reading them.
50	-----
51	Yes, I do.
52	Yes, I mostly read, because I play games with demos. I mean mostly games with topics and themes.
53	-----
54	-----
55	-----
56	-----
57	Not always, but if there is an important move to make, I have to, because without learning the next clue, sometimes it is meaningless to continue the game.
58	I find them waste of time, but I have to, although I don't want to. Because when I understand the wishes from me as a player, I enjoy the game more. By this way, I also get the whole big picture of the story.
59	-----
60	-----
61	-----
62	-----
63	-----
64	-----
65	-----
66	-----
67	Yes
68	Unfortunately, I have to read sometimes, especially if I play CRPG or adventure games. Because there are hints about the next step.
69	-----
70	-----
71	Demos are very helpful when I want to understand the story in a game, but sometimes they can be boring as well. Because I have to find some of the words from the dictionary to understand what the game wants from me.
72	-----
73	-----
74	-----

75	Yes, I read because it saves time and I continue the game more faster.
76	No because I think they are boring.
77	Very rarely, when I really can't figure out the best movement in the following interface in the game.
78	-----
79	Most of my friends don't enjoy to read the instructions, but I think they are wrong. Because when you read and understand the sentences, you also understand your missions, what to do and what not to do, so I don't lose points or get killed for nothing.
80	-----
81	Yes, I do. Because I can concentrate more and better if I know my following steps.
82	-----
83	-----
84	It changes according to the game I play. Understanding the stories help me to move on more carefully.
85	-----
86	I generally don't read them because they are time wasting.
87	-----
88	Yes, because I learn what I will do while I am playing it.
89	-----
90	I can focus on the game better if I read them, but I like the short ones.
91	
92	-----
93	-----
94	-----
95	No, I prefer learning while playing the game. Demos are boring. I generally watch the visual ones, they are a summary of the game.
96	Learning about the game is sometimes beneficial, so I read most of the demos. But I like them if they are short.
97	-----
98	-----
99	-----
100	Yes, very much, because I can go on faster after I read the demos.
101	I really think they are boring, but – maalesef – we have to read them. The worst part is I

	have to keep a dictionary with me.
102	-----
103	-----
104	-----
105	-----
106	Yes, I read, because I normally like reading books in my free time too.
107	Sometimes yes, sometimes no, because in some games I can't understand what to do if I don't read the demos.
108	-----
109	Yes, I read.
110	-----
111	-----
112	It changes according to the game that I play.
113	-----
114	-----
115	-----
116	Yes, but not usually, they are boring I think.
117	-----
118	-----
119	Yes, I do, because they are helpful to learn about the clues.
120	-----
121	-----
122	-----
123	-----
124	-----
125	Despite I don't want to, I do, because I can find some important points about the following paths.
126	-----
127	-----
128	-----
129	-----
130	-----

APPENDIX G

The Responds of the Open-ended Question 7 in the Introspective Questionnaire

The responds are given as the respondents replied the question without correcting the grammatical or lexical mistakes.

1	The theme of the game is important to make it a good game.
2	-----
3	-----
4	A good computer game should be funny. It must have amusing features, I should have fun while playing it.
5	-----
6	Technical features are important, such as graphics, sound, style, colours etc. If the visual tools are not persuasive and creative, if they are not very realistic, I don't feel to play the game. The screen card of the computer is also important, it must provide realistic 3 dimensional TV view.
7	-----
8	It should have a good story which attracts my attention, should have a very exciting flow, make me play for hours.
9	-----
10	The mentality of the game is important. I mean it must give me a good reason to play it. Childish stories don't attract me very much. The animations, story, characters, visual and sound effects should be in harmony and effective.
11	-----
12	-----
13	Animations and simulations
14	-----
15	-----
16	-----
17	Its story is one of the most important factors to gain popularity. If the story is attractive, that means it is a good game and people prefer that game.
18	-----

19	-----
20	-----
21	-----
22	I don't play computer games.
23	-----
24	-----
25	-----
26	-----
27	It must be complex. It must have a lot of details, like we have in real life. Life has hundreds of details to live in. If a game doesn't include these details, it doesn't look like real. Because life is complex itself. Otherwise it would be imitation. For example, when I want to create a character in a RPG game, I should decide even the skin colour, face impression and clothes of him.
28	I prefer popular games, because I can find something to talk with my friends. When I hear about a popular game, I want to play it. Because if it is popular, it means that it is a qualified game with its story, effects and missions.
29	-----
30	There are lots of similar games in the market, a good game should be different than the others. It should be more creative and have a better story.
31	-----
32	-----
33	-----
34	There should be surprises within the story line. It should involve hidden things. I should get surprised while playing it in every step. If I know and realise the end of the story, I would be bored.
35	A good game should make me think on the meaningful missions. It should give some hints, but I must find a solution or strategy myself, and feel happy in the end.
36	-----
37	-----
38	-----
39	Components of a good game are sound and visual effects, the use of technological inventions such as 3D, Flash, Dreamviewer, Maya programmes, interactive interface and an excellent creative story.

40	-----
41	-----
42	No idea.
43	Fantasy is the key component in a good computer game. I am bored with real life, people want to forget their problems which they live in real life, so a little bit fantasy would be nice.
44	-----
45	The gameplay is a vital component of a game. The keyboard or mouse stick options should be easy to use.
46	A good game gives the player chance to control the game like he wants.
47	I am sorry, I don't play PC games.
48	-----
49	There must be understandable goals. The instructions should be clear. Effects are also important, it mustn't have undeveloped multimedia tools.
50	-----
51	There must be different options each time I play the game. I must have the opportunity to play that game several times with different paths. It should react according to my decisions. That's why I like games like <i>The Sims</i> , <i>World of Warcraft</i> .
52	The game should be adventurous, I should feel excited.
53	-----
54	-----
55	-----
56	-----
57	The good game has realistic components. If it is a FRP or RPG game – it should give use many details like maps, options to create different characters, interactive interface, even a melodical soundtrack etc. The Lord of the Rings became very popular because Tolkien didn't only write a story. He also combined lots of stories to each other, created realistic nations with their traditions and languages, made up a map etc. So I felt like reading a history book telling about real events in the past.
58	I should see all the multimedia tools and control buttons on the screen for fast control and actions. So one can change the settings easily. Also there mustn't be many instructions, we can get bored.
59	-----

60	-----
61	-----
62	I don't know.
63	-----
64	--- -----
65	-----
66	-----
67	The player should control the actions and story. The game should respond to me.
68	The effects make a game attractive. Detailed visual effects should be, such as the shadow of a tree on the grass, the smooth move of waves of the sea, of course together with realistic sound effects. Graphics, realistic camera moves, slow and fast motion camera tricks etc.
69	-----
70	-----
71	It should provide easy keyboard shortcut usage. I must be able to control the game from the keyboard as well. Also navigation from the screen with the mouse is also important. The click buttons should be easy to use.
72	-----
73	-----
74	-----
75	A good game contains a nice story, should make people have fun during the gameplay.
76	Content of the game is the most important part of a game. A gamer can be able to solve problems by using little clues, there must be racing, war, conquering, running away from the police and bad guys, finishing a combat, having several magical powers, fantasy, mostly adventure, fighting with enemies, saving hostages, trying to stay alive in a dangerous environment etc.
77	Simple navigation opportunities, understandable instructions are the good components of a good computer game.
78	-----
79	We would find extra downloadable features from the Internet, the story would be updated after a while, it should have upgraded versions with new additions. Also there should be online support service as well.
80	-----

81	Simulations and animations are the most important parts of a good game. They should be realistic, as real as real life objects.
82	-----
83	-----
84	Playing the game should be fun. Fun is the key component, and this can be provided by exciting story and high technology effects.
85	-----
86	Graphics, sound effects, picture – screen – effects, easy keyboard usage, and a never-ending story. I like <i>World of Warcraft</i> very much, I don't want it to finish.
87	-----
88	A good computer game has to have characters which I can personalize with myself. That's why I like RPG games more than the others. They are less unrealistic – I mean the story and effects - and don't have something boring from real life.
89	-----
90	What are the components of a good computer game? Let me think. Artificial intelligence of a game is important. It should be interactive.
91	Good PC games have nice stories which follow each other. There should be a goal in the end. Navigation tools should also be easy to use. I must be able to see all the multimedia clicks on the screen to control the actions.
92	-----
93	-----
94	-----
95	Graphics, visual scenes, realistic pictures, simulations
96	I hate too long texts, action is important for me. A good game should contain lots of actions and missions, difficult ones to solve.
97	-----
98	-----
99	-----
100	It mustn't be boring, animations must be good, finally instructions must be obvious.
101	The episodes and chapters should be exciting, the story I can say in short.
102	-----
103	-----
104	-----

105	-----
106	I have never thought before, but animations I think.
107	What I like about a computer game is its being full of surprises. If I understand what is going to happen next, I don't want to continue. Surprising and unexpected next steps are interesting. The story writer must be very imaginative.
108	-----
109	The components of a good game are: 1- realistic effects 2- animations 3- a continuous story with surprises etc.
110	-----
111	-----
112	Story
113	-----
114	-----
115	-----
116	All of the PC games are generally good, all of their components are good also. I don't have a problem with them. Maybe, animations must be developed.
117	-----
118	-----
119	There can be a good story with lots of surprise events. Technology improved very very much and game companies use these technologies in the games. So you feel more real when you play the game. Story and technology are important for a computer game.
120	-----
121	-----
122	-----
123	-----
124	-----
125	I want to enjoy my free time, so computer games should be enjoyable free time activities. Because I play them to enjoy my time, so funny games are the best for me.
126	-----
127	-----
128	-----
129	-----
130	-----

APPENDIX H

The Responds of the Open-ended Question 1 in Retrospective Questionnaire

The responds are given as the respondents replied the question without correcting the grammatical or lexical mistakes.

1	Yes, it improved my vocabulary knowledge, because I learned many new words from the game. I looked some of the words from the dictionary; because I had to if I wanted to go on the game.
2	It must have improved my vocabulary knowledge, because I couldn't speak or write very well in the past. I still make grammar mistakes, but I can use good vocabulary to write an essay or while speaking, so people can understand me at least.
3	Yes
4	It improved my vocabulary a little bit I think, because I can understand what I read in the internet more easier.
5	Playing computer games improves vocabulary level, because I like fun and I hate boring lessons. PC games are fun for me. I learn something without looking up to the dictionary. Pictures, animations and scenes (exciting and active) and characters help me understand the story. I didn't look up to the dictionary, but I know the meanings, because I followed the instructions and I succeeded my missions. If I didn't understand them, I couldn't do the rights things. So, it means I learned vocabulary, I can tell most of their meanings now.
6	I don't know, but I think yes Oblivion improved my vocabulary knowledge. Because I used some of them in my presentation in my Reading and Speaking lesson two or three weeks ago, and my teacher didn't correct them. So, I think I used them in the right place.
7	Yes, it improved my knowledge.
8	Yes
9	It improved I think, because it reinforced my vocabulary knowledge. You see, even here I used a word that I learned from the game – "reinforced".
10	It has improved my level of vocabulary I think, because last month I visited my aunt in London, and I felt more relaxed when I spoke with her British friends. Maybe I did errors while speaking, but I could express what I wanted to say sometimes with only one word. I know that is not speaking, but I could communicate with them even when I had a problem

	to find the correct grammar structure.
11	Yes, playing computer games must improved my vocabulary knowledge.
12	Yes, I think it did, because in the past I didn't used to understand the songs I listened to very much. Now I can understand the main idea they want to imply. I want to say something interesting, that is; in some kinds of music, I think the stories are the same with RPG computer games, because I can see many same words in their lyrics as well, for example especially hard rock, trash and underground songs.
13	It improved my vocabulary, not very much, but it did, because I can understand what I read better.
14	Yes, because I know a lot of words now.
15	Yes, because -----
16	It improved my knowledge because I looked a lot of words up on the online dictionaries to understand what to do in the game. So, I think I learned most of them. I can't say how many, but I know I have learned a lot.
17	Yes
18	I think it improved, since I know some words which my friends don't know now. Sometimes I tell them the meaning of some words which I remember from computer games while we are watching a movie or reading something, and they are surprised. I feel superior to them and sometimes make show-off.
19	Yes, it did, cause I use dictionary more less nowadays, I used to use it more in past.
20	
21	I firmly believe that playing computers improve vocabulary knowledge, because you don't get bored while playing a game. It is fun and enjoyable, not like a boring lesson. Lessons sometimes can be fun too, but playing a computer game is not only fun, but also very exciting. You lose yourself within the game, and it motivates you to find the meanings of the game. So, now I know a lot of words now.
22	Yes, it improved.
23	I can speak better now, I don't claim that I am fast but I don't have much difficulty at least in finding the right word.
24	Internet is very important for me, because I spend most of my time there. I chat with my friends, I also have friends from abroad. After I started playing computer games, I now understand them more easily. I don't know the reason, however I think now I know more words because of the games, so I understand their sentences better. Sometimes I don't

	understand the all sentence, but when I see a word which is known by me, I can guess what they want to say. Yes, I think it improved my vocabulary knowledge.
25	I have never thought whether it improved my vocabulary knowledge or not, but it has I suppose. Because I realised that I can communicate with people more fluently nowadays, because I am not stuck in words. I don't pause to find the correct word. Maybe I don't place it in the correct place, but I think I am more successful now in expressing myself.
26	It must have been. I got a good grade from my English report writing homework and I hadn't looked up many words from the dictionary while doing my homework.
27	Yes,
28	Yes, it improved a lot of.
29	Yes, it improved a lot. It must already improve my vocabulary knowledge, because I
30	I believe that it has improved my vocabulary knowledge, because I am interested in scouting, outdoor sports and I am a member of Greenpeace foundation, and there are lots of web pages about these, now I can understand these and the newsletters which I receive from them better. I don't feel the need of looking them in a dictionary, I do so, but not as much as I did in the past.
31	Yes, it had improved my vocabulary, due to the fact that I found the meanings of necessary words in the dictionary, because you can't go on in some parts of the game if you do not look up in the dictionary.
32	I think it really improves my vocabulary knowledge directly, because I know that I have to look up the dictionary if I don't understand the words in an instruction and so if I want to go on the game. Sometimes I can know the meaning of the word from the story or the actions in the game, which means I don't use a dictionary, but I guess it and go on, and mostly I succeed to achieve the mission. So I think, the meaning of that word was X and it is placed in my mind like that.
33	-----
34	It developed my knowledge, because I can understand the movies I watch on CBN-C better. I don't understand most of the things when I only watch them of course, because their pronunciation is sometimes very difficult. However when I read the subtitles, I can understand what they say better now.
35	Yes, it did, because I started to understand what I am reading on the Internet better, I think. I don't stuck onto words as I did in the past. I continue reading faster.

APPENDIX I

The Descriptive Statistics (Frequencies) of Each Close-ended Item in the Introspective Questionnaire

Frequency Tables

Single player

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	38	86,4	86,4	86,4
	No	6	13,6	13,6	100,0
	Total	44	100,0	100,0	

Multi-player/Online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	50	50	50
	No	22	50	50	100,0
	Total	44	100,0	100,0	

Sports

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	31,8	31,8	31,8
	No	30	68,2	68,2	100,0
	Total	44	100,0	100,0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	36,4	36,4	36,4
	No	28	63,6	63,6	100,0
	Total	44	100,0	100,0	

Action

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	84,1	84,1	84,1
	No	7	15,9	15,9	100,0
	Total	44	100,0	100,0	

FPS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	27,3	27,3	27,3
	No	32	72,7	72,7	100,0
	Total	44	100,0	100,0	

RPG-Role Play Games

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	42	95,5	95,5	95,5
	No	2	4,5	4,5	100,0
	Total	44	100,0	100,0	

Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	63,6	63,6	63,6
	No	16	36,4	36,4	100,0
	Total	44	100,0	100,0	

PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	39	88,6	88,6	88,6
	No	5	11,4	11,4	100,0
	Total	44	100,0	100,0	

PS2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	43,2	43,2	43,2
	No	25	56,8	56,8	100,0
	Total	44	100,0	100,0	

PsP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	6,8	6,8	6,8

No	41	93,2	93,2	100,0
Total	44	100,0	100,0	

Xbox

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	3	6,8	6,8	6,8
No	41	93,2	93,2	100,0
Total	44	100,0	100,0	

Gamecube

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	3	6,8	6,8	6,8
No	41	93,2	93,2	100,0
Total	44	100,0	100,0	

APPENDIX J

The Descriptive Statistics (Frequencies) of Each Close-ended Item in the Retrospective Questionnaire

3.5.5.1. I started to understand the game instructions properly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	71,4	71,4	71,4
	No	10	28,6	28,6	100,0
	Total	35	100,0	100,0	

3.5.5.2. I can understand the movies I watch better.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	57,1	57,1	57,1
	No	15	42,9	42,9	100,0
	Total	35	100,0	100,0	

3.5.5.3. I can understand the foreign songs I listen to better.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25,7	25,7	25,7
	No	26	74,3	74,3	100,0
	Total	35	100,0	100,0	

3.5.5.4. I can understand the books, magazines, e-mails etc. I read better.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	51,4	51,4	51,4
	No	17	48,6	48,6	100,0
	Total	35	100,0	100,0	

3.5.5.5. The frequency of using the dictionary has decreased.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	19	54,3	54,3	54,3
No	16	45,7	45,7	100,0
Total	35	100,0	100,0	

3.5.5.6. I can express myself better.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	8	22,9	22,9	22,9
No	27	77,1	77,1	100,0
Total	35	100,0	100,0	

3.5.5.7. I can communicate with foreigners better.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	7	20,0	20,0	20,0
No	28	80,0	80,0	100,0
Total	35	100,0	100,0	

APPENDIX K

The Pre-Test

Fill in the blanks with the appropriate words given in the box below. Please do not change the formation of the words.

Virtues	Spawning	wane	mainstream	recycles
exploitation	Conjures	triggers	distracts	struggling

1. She's _____ to bring up a family alone. She has been really having hard times.
2. Nike is the number-one corporation in the _____ of children! A thirteen-year-old child laborer earns 0.03 dollars per shoe, and a pair of Nike is sold for at least 100 dollars.
3. For most of the students, what a good educator _____ up is a teacher who always gives high grades.
4. Undoubtedly, *Lost* has become the most popular TV series broadcast nowadays. At the heart of the series is a complex storyline _____ numerous unresolved questions.
5. Actually, *Lost* is not the first _____ show of J.J Abrams. Before *Lost*, Abrams was known as the young director of *Alias*, which was another popular TV show.
6. The popularity of the original and ethnic music genres starts to _____ and as time passes by; their influence on masses becomes weaker.
7. I haven't heard a single popular song which sounds different from the others or gives a different message. Any "new" song _____ the melodies of former ones, repeats their simple lyrics, and uses the same themes again and again.

8. Nowadays we see different warnings on cigarette packets. One of the most common reads as “*Smoking causes cancer.*” However, the addicts go on smoking even though they know that it _____ many diseases.
9. I can never read anything when the music is playing or the TV is on. The noise _____ my attention and I cannot concentrate.
10. In the past, loyalty, truthfulness, and refinement were the _____ people had. In today’s world, the things people value have changed a lot. Today, a person’s worthiness is measured by how much money they have.

Esteem	Extinction	inhabitants	estimates	procrastinating
affluent	preservation	unaccountable	accelerate	futile

11. Yesterday my boyfriend and I were talking while lingering over our coffees. Then, in the middle of the conversation, he made a(n) _____ move; he stood up and left me alone at the café!
12. I have the very bad habit of _____. Each time I have a duty, I decide to start on time but then I cannot find the energy or desire to do it and I enjoy myself with other things until there is no time left to accomplish the task.
13. Alfred Hitchcock, the director and the master of the thriller genre, is still held in high _____ by other filmmakers as well as his countless fans.
14. He tried to paddle against the current, but it was a _____ effort. There was no chance of being successful against strong flow of water.

15. Some of the objectives of TEMA Foundation are helping the _____ of natural habitats and health within the country, combating soil erosion, protecting soil and vegetative cover, raising public awareness.
16. Istanbul is the most populated city in Turkey, with 12,000,000 _____. The population of the metropolis has more than tripled during the 25 years.
17. Using special chemicals to _____ the growth of crops may sometimes be harmful to health.
18. Many are working to save species from _____, animals from cruelty, natural environment from destruction.
19. The police department _____ that the number of violent crimes will increase this year by about 15%.
20. As people become more _____, so their standard and style of living improves.

Asset	tackled	eradication	triumph	sacrifice
alleviate	collateral	detrimental	devoted to	installments

21. Oil pollution has extreme _____ effects on the environment. To give an example, first, oil cannot dissolve in water. It floats on or near the surface. Birds whose feathers become coated with oil lose their waterproofing qualities and they cannot fly well; therefore, many of them drown.
22. Have you noticed how busy everyone seems today? What is the cost of this overwhelming lifestyle? Well, in the short run, we may let some energy go; however, in the long run, we may _____ our health.
23. People tend to lose their sense of humor when they are stressed, or when they take themselves or life too seriously. Developing a sense of humor is a great _____

for people. With a stronger sense of humor, you are more likely to see the funny side of things and laugh more often - and when you're laughing, you cannot be stressed.

24. The final push toward global _____ of polio has been full of pitfalls, but those fighting the disease said they are to finalize a plan that should wipe out the virus.
25. Since we couldn't afford the new furniture for our new house in one go, we agreed to pay for furniture in monthly _____.
26. His professors did not support him in his search for an academic job. Because he was unemployed and needed money, he _____ the job offered in a high school as quickly as possible and began his teaching career.
27. The National Museum of Photography, Film and Television was established in 1983. There are permanent galleries _____ photography, television and animation, a shop, restaurant and a fantastic program of exhibitions and award-winning events and festivals. Therefore, whether you're a family looking for a day out, a keen film-lover or a dedicated researcher, this is the place to be.
28. He gave the bank some stocks and bonds as _____ for the money he borrowed.
29. After giving great effort, winning the championship represents a personal _____ for the team's manager.
30. In order to _____ the intolerable pain of the cancer patients, doctor have to give them medicine at least three times a day.

Ruined	congested	setback	revival	volunteers
reinforced	prerequisite	transition	acquire	impact

31. The earthquake occurred in 1999 left behind _____ houses, schools, and roads in İzmit, Gölcük and Yalova. As many of them required rebuilding, people had to live in tents for months.
32. Thankfully, the anti-smoking campaign has made quite a(n) _____ on young people. Statistics show that the number of smokers has been in decline for some years.
33. Passing “Advanced English I & II” is a(n) _____ for taking “Reading and Speaking in English”.
34. My brother could have become a good basketball player, but his lack of willingness for team sports became a _____ for him. Today, he is a good lawyer.
35. Most of the relief work in the world is done by _____ who work willingly to offer help in need without being paid.
36. This book takes an interesting look marriage in terms of its gradual _____ from traditional to modern roles of the couple.
37. When the manager wanted strong support and explanations to figures, conclusions from the report were _____ by more recent studies.
38. In our company, a lot of in-service trainings are held for us to be able to _____ fresh skills and improve our immediate knowledge.
39. Every year in Ramadan, many different activities are held such as the plays of Hacivat-Karagöz, traditional folk dances and traditional food and candies are served in the name of the _____ of old Ramadans.
40. Although empty and peaceful at early hours on weekdays, a focal centre like İstiklal Street quickly turns into a(n) _____ place filled with people making it impossible to walk through this crowd at weekends.

APPENDIX L

The Post-Test

Fill in the blanks with the appropriate words given in the box below. Please do not change the formation of the words.

tackling	devoted to	eradication	acquired	alleviates
prerequisite	reinforce	sacrifice	installments	detrimental

1. The most effective teachers _____ students with frequent feedback and praise of their performance; this motivating system lets students' self-confidence know that they are on the right track and doing well.
2. Last year, by attending free seminars I _____ new skills and stayed up-to date with the latest industry offerings.
3. After a break-up and divorce, you need to spend some time alone and take that time to learn about yourself and gain some insight before _____ a new relationship with another person.
4. Smoking is _____ to health not only for smokers, but for anybody around smokers. As especially people working in pubs and bars are badly affected by passive smoking, smoke-free workplace laws aim to reduce preventable deaths and diseases by banning smoking in public places.
5. Younger workers are less willing to _____ their private lives for work and are more self-motivated in taking charge of their own careers.

6. At the museum of Contemporary Art in Tokyo, there is an annual exhibition _____ **to** new trends in Japanese Art and everything on display is labelled in English.
7. Many credit cards offer the possibility of buying goods and services in _____ without interest and receiving bonuses for every transaction made.
8. The most important _____ for teachers' success is an ability to get to know their students, including their personality traits and expectations.
9. Public transportation _____ traffic jams, saving money on road widening and is easier on the environment.
10. The _____ of hunger is a common objective of all developed countries and others in a position to help.

Virtue	triggered	impact	mainstream	distracted
Ruin	setback	triumph	unaccountably	procrastinate

11. In recent years, technological advances have changed the face of drug discovery beyond recognition. As a result, today the _____ of these advances on the issue is remarkable.
12. The concert was _____ cancelled. We are stil waiting for an explanation from the authorities.
13. Except a slight _____ in the project, I can say on the whole everything ran smoothly.
14. I know patience is a(n) _____ but sometimes I get so angry with my children and shout at them.

15. When we _____, we add unnecessary stress to a situation by not dealing with it immediately and getting it over with.
16. People who smoke _____ their health. It is almost certain that at some time in their lives they will have a kind of disease related to smoking.
17. I usually go to the library to study for exams because the dorm is too noisy and I am easily _____ by that noise.
18. Although European art cinema is quite different from _____ Hollywood films that are widespread around the world, it is still very popular among people.
19. Forest Whitaker won the Academy Award for best actor for his acclaimed performance as Ugandan ruler Idi Amin in "The Last King of Scotland". Many critics said that Mr. Whitaker's _____ was no surprise because he deserved it.
20. The First World War was _____ by the assassination of the Archduke Francis Ferdinand in 1914. However, the war's roots went back for decades in the dark and complex diplomacy of the great powers.

affluent	esteem	struggling	collateral	assets
inhabitants	volunteer	estimate	exploitation	preservation

21. Northern European countries are _____ and have high standards of living when compared to Eastern European countries where the economy is not so good.
22. Scientists _____ that smoking reduces life expectancy by around 12 years on average, but this is not an exact number.
23. Some people have sold their _____ like furniture, jewelry, or cars to raise the extra cash to overcome the crisis.

24. Alderson is a very successful writer. All the critics hold him in high _____ and praise his works.
25. The _____ of the wild landscape and unspoiled natural environment is important for mankind. If you destroy them, you also destroy the natural balance.
26. A new study provides evidence that the _____ of Christopher Columbus's first settlement were desperate to find metals which they needed.
27. I had nothing to offer as _____ and so I couldn't get a loan from the bank.
28. Some _____ students worked two half days for an organization that helps homeless children. They think that doing a job without expecting any payment can have great impact on one's personal development.
29. After the devastating flood, interestingly, no one was interested to talk about the people who had survived and were still _____ hard for survival in the absence of food and shelter in the village.
30. _____ among farm workers in the US is quite common. They are living in unhealthy conditions with no health benefits or paid vacation.

Wane	transition	extinct	accelerate	conjure
congested	revival	spawn	recycle	futile

31. Fantastic films such as *Harry Potter* and *Lord of the Rings* _____ up a magical world to movie watchers.
32. In the field of medicine, genetics may improve our health and healthcare. Increasing understanding of genetics will prevent diseases and provide more effective use of existing medicine. We will, hopefully, see genetics _____ advances in other fields, too.

33. During the _____ period between school and work, fresh graduates have trouble in transferring knowledge from education to workplace.
34. We never throw away used paper. We send them to _____ centres.
35. *Modern Talking* was a popular band in the eighties but their popularity began to _____ by the late nineties. I think teenagers today haven't heard about them.
36. Normally, these plants don't grow so fast but they use special chemicals to _____ their growth.
37. It was _____ to argue with my son about his irresponsible behaviour. He didn't change his mind. In fact, he didn't even listen to me.
38. Recently there has been a(n) _____ of traditional Turkish food in Turkey. People campaigned against fast food, Turkish food competitions were held, and new cookbooks about Turkish food were published.
39. Many tribes in South America became _____ when they came into contact with Western colonizers because all the members of the tribes died of illnesses brought by them.
40. Anyone who comes from a small city is shocked to see the _____ roads of İstanbul. They are full of people and vehicles all day long, sometimes even at night.

APPENDIX M

The Pre-Test Key

Fill in the blanks with the appropriate words given in the box below. Please do not change the formation of the words.

Virtues	Spawning	wane	mainstream	recycles
exploitation	Conjures	triggers	distracts	struggling

1. She's **struggling** to bring up a family alone. She has been really having hard times.
2. Nike is the number-one corporation in the **exploitation** of children! A thirteen-year- old child laborer earns 0.03 dollars per shoe, and a pair of Nike is sold for at least 100 dollars.
3. For most of the students, what a good educator **conjures** up is a teacher who always gives high grades.
4. Undoubtedly, *Lost* has become the most popular TV series broadcast nowadays. At the heart of the series is a complex storyline **spawning** numerous unresolved questions.
5. Actually, *Lost* is not the first **mainstream** show of J.J Abrams. Before *Lost*, Abrams was known as the young director of *Alias*, which was another popular TV show.
6. The popularity of the original and ethnic music genres starts to **wane** and as time passes by; their influence on masses becomes weaker.
7. I haven't heard a single popular song which sounds different from the others or gives a different message. Any "new" song **recycles** the melodies of former ones, repeats their simple lyrics, and uses the same themes again and again.

8. Nowadays we see different warnings on cigarette packets. One of the most common reads as “*Smoking causes cancer.*” However, the addicts go on smoking even though they know that it **triggers** many diseases.
9. I can never read anything when the music is playing or the TV is on. The noise **distracts** my attention and I cannot concentrate.
10. In the past, loyalty, truthfulness, and refinement were the **virtues** people had. In today’s world, the things people value have changed a lot. Today, a person’s worthiness is measured by how much money they have.

esteem	extinction	inhabitants	estimates	procrastinating
affluent	preservation	unaccountable	accelerate	futile

11. Yesterday my boyfriend and I were talking while lingering over our coffees. Then, in the middle of the conversation, he made a(n) **unaccountable** move; he stood up and left me alone at the café!
12. I have the very bad habit of **procrastinating**. Each time I have a duty, I decide to start on time but then I cannot find the energy or desire to do it and I enjoy myself with other things until there is no time left to accomplish the task.
13. Alfred Hitchcock, the director and the master of the thriller genre, is still held in high **esteem** by other filmmakers as well as his countless fans.
14. He tried to paddle against the current, but it was a **futile** effort. There was no chance of being successful against strong flow of water.

15. Some of the objectives of TEMA Foundation are helping the **preservation** of natural habitats and health within the country, combating soil erosion, protecting soil and vegetative cover, raising public awareness.
16. Istanbul is the most populated city in Turkey, with 12,000,000 **inhabitants**. The population of the metropolis has more than tripled during the 25 years.
17. Using special chemicals to **accelerate** the growth of crops may sometimes be harmful to health.
18. Many are working to save species from **extinction**, animals from cruelty, natural environment from destruction.
19. The police department **estimates** that the number of violent crimes will increase this year by about 15%.
20. As people become more **affluent**, so their standard and style of living improves.

Asset	tackled	eradication	triumph	sacrifice
alleviate	collateral	detrimental	devoted to	installments

21. Oil pollution has extreme **detrimental** effects on the environment. To give an example, first, oil cannot dissolve in water. It floats on or near the surface. Birds whose feathers become coated with oil lose their waterproofing qualities and they cannot fly well; therefore, many of them drown.
22. Have you noticed how busy everyone seems today? What is the cost of this overwhelming lifestyle? Well, in the short run, we may let some energy go; however, in the long run, we may **sacrifice** our health.
23. People tend to lose their sense of humor when they are stressed, or when they take themselves or life too seriously. Developing a sense of humor is a great **asset** for

people. With a stronger sense of humor, you are more likely to see the funny side of things and laugh more often - and when you're laughing, you cannot be stressed.

24. The final push toward global **eradication** of polio has been full of pitfalls, but those fighting the disease said they are to finalize a plan that should wipe out the virus.

25. Since we couldn't afford the new furniture for our new house in one go, we agreed to pay for furniture in monthly **installments**.

26. His professors did not support him in his search for an academic job. Because he was unemployed and needed money, he **tackled** the job offered in a high school as quickly as possible and began his teaching career.

27. The National Museum of Photography, Film and Television was established in 1983. There are permanent galleries **devoted to** photography, television and animation, a shop, restaurant and a fantastic program of exhibitions and award-winning events and festivals. Therefore, whether you're a family looking for a day out, a keen film-lover or a dedicated researcher, this is the place to be.

28. He gave the bank some stocks and bonds as **collateral** for the money he borrowed.

29. After giving great effort, winning the championship represents a personal **triumph** for the team's manager.

30. In order to **alleviate** the intolerable pain of the cancer patients, doctor have to give them medicine at least three times a day.

Ruined	congested	setback	revival	volunteers
reinforced	prerequisite	transition	acquire	impact

31. The earthquake occurred in 1999 left behind **ruined** houses, schools, and roads in İzmit, Gölcük and Yalova. As many of them required rebuilding, people had to live in tents for months.
32. Thankfully, the anti-smoking campaign has made quite a(n) **impact** on young people. Statistics show that the number of smokers has been in decline for some years.
33. Passing “Advanced English I & II” is a(n) **prerequisite** for taking “Reading and Speaking in English”.
34. My brother could have become a good basketball player, but his lack of willingness for team sports became a **setback** for him. Today, he is a good lawyer.
35. Most of the relief work in the world is done by **volunteers** who work willingly to offer help in need without being paid.
36. This book takes an interesting look marriage in terms of its gradual **transition** from traditional to modern roles of the couple.
37. When the manager wanted strong support and explanations to figures, conclusions from the report were **reinforced** by more recent studies.
38. In our company, a lot of in-service trainings are held for us to be able to **acquire** fresh skills and improve our immediate knowledge.
39. Every year in Ramadan, many different activities are held such as the plays of Hacivat-Karagöz, traditional folk dances and traditional food and candies are served in the name of the **revival** of old Ramadans.
40. Although empty and peaceful at early hours on weekdays, a focal centre like İstiklal Street quickly turns into a(n) **congested** place filled with people making it impossible to walk through this crowd at weekends.

APPENDIX N

The Post-Test Key

Fill in the blanks with the appropriate words given in the box below. Please do not change the formation of the words.

tackling	devoted to	eradication	acquired	alleviates
prerequisite	reinforce	sacrifice	installments	detrimental

1. The most effective teachers **reinforce** students with frequent feedback and praise of their performance; this motivating system lets students' self-confidence know that they are on the right track and doing well.
2. Last year, by attending free seminars I **acquired** new skills and stayed up-to date with the latest industry offerings.
3. After a break-up and divorce, you need to spend some time alone and take that time to learn about yourself and gain some insight before **tackling** a new relationship with another person.
4. Smoking is **detrimental** to health not only for smokers, but for anybody around smokers. As especially people working in pubs and bars are badly affected by passive smoking, smoke-free workplace laws aim to reduce preventable deaths and diseases by banning smoking in public places.
5. Younger workers are less willing to **sacrifice** their private lives for work and are more self-motivated in taking charge of their own careers.
6. At the museum of Contemporary Art in Tokyo, there is an annual exhibition **devoted to** new trends in Japanese Art and everything on display is labelled in English.

7. Many credit cards offer the possibility of buying goods and services in **instalments** without interest and receiving bonuses for every transaction made.
8. The most important **prerequisite** for teachers' success is an ability to get to know their students, including their personality traits and expectations.
9. Public transportation **alleviates** traffic jams, saving money on road widening and is easier on the environment.
10. The **eradication** of hunger is a common objective of all developed countries and others in a position to help.

virtue	triggered	impact	mainstream	distracted
ruin	setback	triumph	unaccountably	procrastinate

11. In recent years, technological advances have changed the face of drug discovery beyond recognition. As a result, today the **impact** of these advances on the issue is remarkable.
12. The concert was **unaccountably** cancelled. We are stil waiting for an explanation from the authorities.
13. Except a slight **setback** in the project, I can say on the whole everything ran smoothly.
14. I know patience is a(n) **virtue** but sometimes I get so angry with my children and shout at them.
15. When we **procrastinate**, we add unnecessary stress to a situation by not dealing with it immediately and getting it over with.
16. People who smoke **ruin** their health. It is almost certain that at some time in their lives they will have a kind of disease related to smoking.
17. I usually go to the library to study for exams because the dorm is too noisy and I am easily **distracted** by that noise.

18. Although European art cinema is quite different from **mainstream** Hollywood films that are widespread around the world, it is still very popular among people.
19. Forest Whitaker won the Academy Award for best actor for his acclaimed performance as Ugandan ruler Idi Amin in "The Last King of Scotland". Many critics said that Mr. Whitaker's **triumph** was no surprise because he deserved it.
20. The First World War was **triggered** by the assassination of the Archduke Francis Ferdinand in 1914. However, the war's roots went back for decades in the dark and complex diplomacy of the great powers.

affluent	esteem	struggling	collateral	assets
inhabitants	volunteer	estimate	exploitation	preservation

21. Northern European countries are **affluent** and have high standards of living when compared to Eastern European countries where the economy is not so good.
22. Scientists **estimate** that smoking reduces life expectancy by around 12 years on average, but this is not an exact number.
23. Some people have sold their **assets** like furniture, jewelry, or cars to raise the extra cash to overcome the crisis.
24. Alderson is a very successful writer. All the critics hold him in high **esteem** and praise his works.
25. The **preservation** of the wild landscape and unspoiled natural environment is important for mankind. If you destroy them, you also destroy the natural balance.
26. A new study provides evidence that the **inhabitants** of Christopher Columbus's first settlement were desperate to find metals which they needed.
27. I had nothing to offer as **collateral** and so I couldn't get a loan from the bank.

28. Some **volunteer** students worked two half days for an organization that helps homeless children. They think that doing a job without expecting any payment can have great impact on one's personal development.
29. After the devastating flood, interestingly, no one was interested to talk about the people who had survived and were still **struggling** hard for survival in the absence of food and shelter in the village.
30. **Exploitation** among farm workers in th US is quite common. They are living in unhealthy conditions with no health benefits or paid vocation.

Wane	transition	extinct	accelerate	conjure
congested	revival	spawn	recycle	futile

31. Fantastic films such as *Harry Potter* and *Lord of the Rings* **conjure** up a magical world to movie watchers.
32. In the field of medicine, genetics may improve our health and healthcare Increasing understanding of genetics will prevent diseases and provide more effective use of existing medicine. We will, hopefully, see genetics **spawn** advances in other fields, too.
33. During the **transition** period between school and work, fresh graduates have trouble in transferring knowledge from education to workplace.
34. We never throw away used paper. We send them to **recycle** centers.
35. *Modern Talking* was a popular band in the eighties but their popularity began to **wane** by the late nineties. I think teenagers today haven't heard about them.
36. Normally, these plants don't grow so fast but they use special chemicals to **accelerate** their growth.

37. It was **futile** to argue with my son about his irresponsible behaviour. He didn't change his mind. In fact, he didn't even listen to me.
38. Recently there has been a(n) **revival** of traditional Turkish food in Turkey. People campaigned against fast food, Turkish food competitions were held, and new cookbooks about Turkish food were published.
39. Many tribes in South America became **extinct** when they came into contact with Western colonizers because all the members of the tribes died of illnesses brought by them.
40. Anyone who comes from a small city is shocked to see the **congested** roads of İstanbul. They are full of people and vehicles all day long, sometimes even at night.

APPENDIX O

Common Target Vocabulary List

1. reinforce	30. exploitation
2. acquired	31. conjure
3. tackling	32. spawn
4. detrimental	33. transition
5. sacrifice	34. recycle
6. devoted	35. wane
7. instalments	36. accelerate
8. prerequisite	37. futile
9. alleviates	38. revival
10. eradication	39. extinct
11. impact	40. congested
12. unaccountably	
13. setback	
14. virtue	
15. procrastinate	
16. ruin	
17. distracted	
18. mainstream	
19. triumph	
20. triggered	
21. affluent	
22. estimate	
23. assets	
24. esteem	
25. preservation	
26. inhabitants	
27. collateral	
28. volunteer	
29. struggling	

