

# Analyze negative effects in playing computer games psychology essay



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Computer games are in the phase of swift development. Games are complex to design and spreading quickly to various platforms like online gaming, Phones, Computers. In 1958 at Brookhaven National Laboratory, idea of combining computers with electronic graphical display to play games has been developed. (Rice 2007) After few years computer games has become commercial product in market and first patent petition filed to get license was Sanders Associates in 1964. His main focus was to ignore mainframe computer which are costly instead those computers his intention was to provide home users a small and simple box that should display graphical gaming output on television. Later in 1972 Magnavox secured rights to patent and released first home video gaming console i. e., odyssey. (Rice 2007) The founder of Atari Corporation, Bushnell commissioned a coin arcade version of video Ping-Pong called PONG and later sold to home market. (Winters, 2010)

In 1970's computer games are used to play with giving connection to television. In 1981, no single game dominated the field any more new games came out, rendering space invaders obsolete (Surrey 1982). In 1991, sales of console games attached to Television have been increased by 200 percent and 700 percent increase in hand games. Funk (1993) recognized that computer games are mostly played by adolescents. Games are divided into four categories they are Core games, casual games, serious games and educational games.

If we assume an incident occurred in Leicester, a 14 year old boy was killed due to severe hammer and stabbing by one of his friend. (Video Game Sparked' Hammer Murder 2004) According to CNN, The boy who killed his  
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friend was addicted to a game called Manhunt in which player gets good score for violent killings. This is not a single incident to happen there is lot of similar incidents which occurred because of computer games. (Video Game Sparked' Hammer Murder 2004) These lead several researchers to have a study on effects of computer games.

Although educational computer games are very good tool for children's but most of the companies produce non violent games because they use violence as marketing ingredient. Ninety two percent of youngsters aged between 2-17 in USA play computer games but their parents don't know about the games their children's play and what are the factors their children's get effected of?. (Walsh 2002)

According to ESA Entertainment Software Association (ESA 2009), total sales for computer and video games in USA for 2009 are 273. 5 million. From 2005 to 2009, the industry's real annual growth rate was more than seven times the real annual growth rate for the entire economy (ESA 2009). Sony Europe boss Andrew House has today confirmed at Gamescom that PS3 sales to date now sit at 16 million in Europe (Games com 2010). Now the Present generation of video games is seventh generation. Nintendo Wii, Microsoft game Xbox 360, Play station 3 is top game developers in world to produce console gamesThe three largest producers of and markets for computer and video games are US, Canada, Japan and the UK. Few other important markets are Australia, Spain, Germany, France and Italy. Ireland is the largest per capita consumers of video games. (Outlook 2009-2013)

Computer games limits the movement of player because keyboards, mouse etc restricts the player to move which may lead to various Physiological  
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problems such as obesity and spinal problems. Provenzo (1991) noticed Nintendo games and explained that violence was a major theme of 40 out of 47 of the most familiar games.

First educational game was released in 1974 by MECC i. e. Oregon Trail. It was initially developed 1971 by Don Rawitsch, Bill Heinemann, and Paul Dillenberger and then released into market in 1974. This game became more popular and successful because it contains intense knowledge of geography, history. In 1980 educational games market expanded in quick phase but one issue with educational games in 1980's is, educational games totally dependent on adventure genre. Lot of games were developed which had maximum adventure content and this type of genre games were developed till early 1990. In the long run educational games lost its demand and commercial games started to dominate computer games market.

After 40years, computer games are now also used as educational tool in schools, in hospitals for treatment and in military. In Minnesota's Northwestern Hospital are using Nintendo Wii to give treatment to their patients to gain physical exercise goals (Drummond, 2008). Computer games have become a major part of our life when we are in leisure we spend time by playing games (Walling, 2007). Moreover these games are used to improve skills in young people and it is also used to stimulate brain with mind games. For example patients who suffer with disease Dementia. Dementia affects brain to cause memory loss and unusual behaviour to slow down this disease few computer games are used. " Rather than aiming for an experience that superficially resembles leisure based fun activities, or once which attempts to conceal the educational purpose, it might be argued that <https://assignbuster.com/analyze-negative-effects-in-playing-computer-games-psychology-essay/>

we should understand the deep structures of the games play experience that contribute to flow and build these into environments designed to support learning.” (Kirriemuir & McFarlane, 2003)

### **Statement of problem:**

Excessive use of computer games may cause negative effects such as Aggressive behavior, Addiction, low self esteem, strain, distracted sleep and Psychological effects (Anderson & Bushman, 2001).

On the other side Computer Games have lot of advantages like stimulation caused by the games also have positive effects. Educational learning Games in US and Europe widely use and achieved good results so this can be executed in India. Educational computer games are not used in India because no proper knowledge and awareness about advantages and no proper support is been given to school administrations. It will be very beneficial if they use educational games as training tool in primary and secondary schools. Educational Computer Games can be used to enhance and provide good mean to children’s if it is incorporated into teaching. These games must be designed in such a way that it should satisfy and reach student needs as well as faculty requirement. According to Bergen (2001), educational computer games are very helpful tool to provide some critical skills to students such as critical thinking, Learning skills, interpersonal communication, social skills and respect for diversity. (Bergen, 2001)

In India majority of schools doesn’t use educational computer games and there is a myth that these games damage children’s behaviour, affect their thinking ability. In this thesis, we will provide enough evidence to prove our

stand i. e. Educational Computer Games should be included as a part of education system. Firstly, we would suggest few schools to implement this educational gaming system in India.

### **Purpose of the study:**

Primary focus of this thesis is to analyze negative effects in playing computer games. Some reports and studies show that computer games provide psychological effects make younger people more aggressive. Computer games can also be helpful to teach us important skills like problem solving, spatial skill development and learning abilities.

Educational computer games are becoming more familiar and better tool in primary schools for children's. According to Walling (2002), positive effects are attention performance, developmental issues and spatial and coordination skills. In this thesis we will analyze and provide the effects involved in playing Computer games and in using educational computer games in schools and provide enough data.

### **Research Questions:**

What psychological effects may occur as a consequence of playing Computer games?

What are the advantages possible to find when educational computer games are implemented in schools in India?

### **Target group:**

This thesis is intended to computer game designers and developers so that they can understand the effects of computer games and educational

computer games. Thesis focus is to benefit education system in Schools (INDIA) and every individual who play and going start playing Computer games and to parents to guide their children.

### **Delimitation and Limitations:**

Aspects in this area of study were more, but the time available for us to do this study was less and we tried to narrow our thesis. This thesis mainly focuses on three points: Psychological effects of computer games, effects of educational computer games in schools, provide Suggestions based on conclusion. Less time constraint is major factor to narrow our thesis. Hence we will compare and provide Pearson's correlation, Cronbach's alpha from the data obtained using case studies.

### **Structure of the Thesis:**

This thesis is divided into 6 chapters: Introduction, Procedures/Methods, Anticipating Ethical Issues, Preliminary findings, Discussions, Expected outcomes. The whole structure is represented in diagram 1 shown below:

Chapter 1 provides about the Introduction of the thesis i. e., background, statement of problem, purpose of study, research questions and literature sources.

Chapter 2 provides about research design of the thesis i. e., research strategy, data collection and analysis procedures and strategies used for validating findings.

Chapter 3 presents anticipating ethical issues i. e., this chapter provides literature review on studies.

Chapter 4 presents Preliminary findings i. e., provides the data which is collected and shows how that data is been analyzed and presented according to the structure given in second chapter and also relate literature studies provided in chapter 3 of literature review.

Chapter 5 presents, a discussion in which we investigate which implications of our findings have in regard to our research questions, as well as the field of information systems.

Chapter 6 presents the outcome of thesis i. e., finally this chapter will provide conclusion and recommendations of thesis. In this chapter we also evaluate the scientific value in our research based on criteria's such as validity and reliability.

## **Diagram 1: Structure of Thesis.**

### **Research Design**

The following chapter on research design describes various research methods used in this thesis. This chapter will describe the research perspective, research strategy, data collection procedures, data analysis procedures, strategies for validating findings. It will describe the techniques used to analyze data and finally about reliability and validity of the thesis.

### **2. 1 Research Perspective:**

There are three types of research perspectives: Quantitative approach, Qualitative approach and Mixed Methods approach.

Quantitative Approach: It is an approach where the investigator primarily uses post positivist claims for developing knowledge. Employs strategies of

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inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data. (Creswell, 2003) This approach measures and analyzes relationship between variables not about processes. (Denscombe 2003)

**Qualitative Approach:** It is an approach where the inquirer gains deeper understanding of the phenomenon by experiences, under investigation and with intent of developing a theory. The researcher collects data with the primary intent of developing themes from the data. In qualitative approach researcher describes the research problem that can be understood by exploring concepts. (Creswell, 2003)

**Mixed Methods Approach:** It is an approach where different strategies are employed to gather information either simultaneously or sequentially to best understand research problems. This approach deals with collection of both quantitative and qualitative data sequentially. (Creswell, 2003)

### **Why Quantitative Approach? :**

If we had selected qualitative approach then we can just collect data using case studies and questionnaires from those methods we can't get statistical data and can't analyze relationship between variables. Due to these issues in qualitative approach we had selected quantitative approach.

The aim of quantitative approach is to classify features, count, and design statistical models in an attempt to explain what is observed. Researcher uses tools, such as questionnaires or equipment to collect numerical data. In the first phase we will collect information and finally we will conclude results

through analysis of the numerical data using quantitative approach Data is in <https://assignbuster.com/analyze-negative-effects-in-playing-computer-games-psychology-essay/>

the form of numbers and statistics. Quantitative approach gathers precise information using surveys, questionnaires etc. Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail and quantitative approach deals much with analysis of numerical data.

(Wilderdom, 2010)

The main aim of this study is to analyze impact of computer games in psychological and educational point of view. According to research questions in the thesis we have selected Quantitative Approach.

## **2. 2 Research Strategy:**

Research strategy is defined as, the blue print for the collection, measurement and analysis of data. Research strategy is always dependent on research question and guides the selection of sources and types of information. (Cooper, 2003)

There are various techniques that can be used to conduct a research. There are different types of research that are helpful to deal with research problem: (Yin, 1994)

Exploratory

Descriptive

Explanatory

Experiments

Surveys

## Case study

### **Exploratory:**

An exploratory Study is conducted when the issue or problem is not precise or new and not defined properly. The goal of this study is to collect the information related to the research problem. (Yin, 1994) Exploratory study is dealt to recognize the theme of research problem and procedures for the hypothesis in further validation. This study will be critical when research has been done in new field and to explore new area. (Chisnall 1997)

### **Descriptive:**

According to Yin (1994) descriptive research is used to fetch data related to the present situation i. e. existing variables in the current situation. It also provides statistical calculations, occurrences and central tendencies.

### **Explanatory:**

An explanatory study enhances the theory helpful to describe the empirical study. Almost and always explanatory study is used to find relationship between factors that generate effects caused by those factors. Results will appear in pattern of small parts for final conclusion it will be combined. (Chisnall, 1997) This current thesis is based on explanatory study and we had selected Case study as a strategy to analyze two research questions.

### **Experiments:**

This method deals with altering one variable to analyze if the change in one variable lead to change in another variable. Experimental methods depend

on assignments, alteration of variable etc. In this thesis we don't conduct any experiments and modification of variable is not done. (Oates, 2006)

### **Surveys:**

According to Briony J. Oates (2006) Surveys are techniques where information is collected through interviews with many individuals or group of people.

According to Donald R. Cooper (2003), Personal interviewing is face to face communication i. e. two way conversation conducted by interviewer to get data from a participant. The participant is requested to give information and has some hope that he may get any direct or indirect benefit from the cooperation. Actually this method is very advantageous because it can gather information more perfectly and detailed information. This method can gather information far better than interviewing on phone, via mails. (Cooper, 2003)

### **Case Study:**

It is an approach where researcher can use a single or multiple case studies in their research. The most common approach is to assuming one case study. In any case multiple case studies are taken then every single case is analyzed separately and then researchers compare those cases. (Oates 2006)

### **Why Case Study? :**

In this study after selection of quantitative approach, to justify it we had selected multiple case studies to get clear conclusion of two research questions:

### **Case Study 1:**

First case study deals with the first research question i. e. psychological effects in playing computer games.

Case study depicts investigations in which details are clear, in depth knowledge and analysis on each individual cases are provided. First case study is dealt with the psychological effects in playing computer games. Information from the case study is then analyzed using statistics, Pearson's Correlation is provided for the variables collected i. e. quantitative approach. The basic reason why we have chosen case study is to get clear and in depth details of every individual.

### **Case Study 2 & Case Study 3:**

These two case studies are dealt with second research question i. e. advantages possible to find when educational computer games are implemented in schools in India. The information gathered from these case studies are evaluated using statistics to get a clear idea about advantages in playing educational computer games.

The information gathered in second and third case studies are finally analyzed by comparative analysis to provide the result and to show clear variations between the second and third case studies to depict conclusion for second research question.

This thesis mainly collects data through multi-case study strategy which is related to research problem and the result given from that data are then

combined or interrelated to get conclusion. All these three case studies in this research are done which is based towards quantitative approach.

### **2.3 Data Collection Procedures:**

Data collection procedures are strategies to achieve our goal. These procedures are the tools which include data gathering, techniques of analysis and techniques of writing. (Denscombe, 2003) Research approaches are, In-depth interviewing, participant observation, projective techniques, psychological testing, Questionnaire and document analysis.

In this thesis we had selected questionnaire as data collection procedures for all the three case studies mentioned in 2. 2.

### **Why Questionnaire? :**

In our thesis we have selected a questionnaire to gather data for first case study implies to first research question and second questionnaire which is suitable and perfect apt to second and third case studies which helps to evaluate second research question.

In our thesis we will prepare two questionnaires to collect data:

First questionnaire main focus is to get important information of individuals so that information collected from questionnaire will be helpful to retrieve numerical data, variables which are later used to provide Pearson's correlation (r value), statistical values such as mean, standard deviation and also provide histogram graphs which depict the clear picture of first research question i. e. psychological effects of playing computer games.

Internet provides researchers to explore different people in different parts of world easily, cheaply and quickly. Questionnaire is carried by emailing questionnaires to people to be completed and reply back by email. Another way is by asking people to visit website and fill the questionnaire. (Oates 2006) In this thesis we send questionnaire via email and get reply from email. So this method is suitable for our first research to get information respective of first case study.

Second questionnaire which is associated to Second and third case studies, that helps to evaluate and provide an analysis of second research question i. e. advantages of educational computer games in schools. The data collected with second questionnaire for two second and third case studies will be in the form of variables, numerical data and the collected data will be calculated independently to provide statistical information so that it is further used to provide an analysis of the effects and advantages of implementing educational computer games in schools i. e. second research question. So the calculated numerical data collected will be finally compared to provide an analysis of second research question.

## **2. 4 Data Analysis Procedures:**

Data Analysis procedure consist of arranging, categorizing, tabulating the evidence to address the initial propositions of a study. (Yin, 1994) This is the most important and critical phase in this study.

The overall structure of Research Design of this thesis is, quantitative approach, multiple case studies, Questionnaires and finally data analysis:

After selecting quantitative approach, for the first research question data is collected using first questionnaire for first case study will be evaluated and Pearson's correlation between variables, statistical data like mean, standard deviation are produced. Further the information is interlinked with the empirical study so this provides conclusion and which deals with first research question.

For second research question, numerical data and variables are collected using second questionnaire with respective to second and third case studies and the gathered numerical data, variables will be evaluated individually.

The result acquired from second and third case studies are then compared to depict clear view of collected variables between two case studies and information is interlinked with the empirical study to provide conclusion i. e. second research question.

Finally, conclusions will be drawn accordingly for both the research questions.

## **2. 5 Strategies for Validating Findings:**

Actually reliability means stability and consistency from research. In our thesis, we used a questionnaire which will have critical, closed and open ended questions validity. And the result is been compared with the previous research and existing theories such as cronbach's alpha which is coefficient of reliability and the value acquired in this thesis will compared with the previous research for reliability.



## **Theoretical Study:**

This chapter contains important concepts used in this research and also describes relevant studies which are already done in this subject area. First we will discuss key concepts used in this thesis and then describe theories which are relevant to the research questions. Further provide contribution of this thesis and present enough studies done in this area. Then we will explain literature sources and its theories available in this subject area. Finally, we will provide theoretical findings, empirical study and from this discussion we will provide what is lacking in those studies? What areas should be analyzed?

## **Key Concepts:**

The main concepts used in this research are: General Aggression Model proposed by Anderson, C. A., & Bushman, B. J. in 2001, it is dealt with the aggression levels of players who play computer games and it is applied to Cross sectional Correlation Study, Pearson's Correlation.

## **3. 2 Subject area relevant for the research:**

The General Aggression Model (GAM), it is a theory which is a combination of all theories on aggression and those theories are discussed in detail in later chapters. According to this model computer games with violent content causes aggression in player's behavior. This theory is used to analyze psychological effects in playing computer games. (Simon Egenfeldt-Nielsen and Jonas Hiede Smith, 2003)

Cross sectional Correlation Study: This study views various groups those who play computer games and level of aggression. This study decides whether a

computer games provide aggression behavior or not. (Simon Egenfeldt-Nielsen and Jonas Hiede Smith, 2003) The theories mentioned above are used to resolve our research questions in this study.

**Pearson's Correlation:** In this study Pearson's Correlation means a process to find whether a relation exists or not between two variables. There are two types of relationship in this correlation i. e. positive relationship and negative relationship.

### **3. 3 Previous Research:**

For the past 30years, researchers have done study in violence on the aggressive behavior of children and adults in playing computer games. (Anderson, 1977; Bushman & Huesmann, 2001; Simon Egenfeldt-Nielsen, Jonas Hiede Smith, 2003). Experimental and correlation research indicated that influence of games on player is high in factors such as, violence, addiction, beliefs. (Bushman, 1998; Bushman&Geen, 1990; Donnerstein, Slaby & Eron, 1994; Smith & Donnerstein, 1998; Simon Egenfeldt-Nielsen, Jonas Hiede Smith, 2003).

A study conducted by Durkin and Barber (2002) have shown that any individuals who play computer games are close to their family and friends. This study has shown interesting results i. e. computer games can raise emotions in particular individual and used for social interactions. Another study by Harris (2001) concludes that relation between self-esteem and computer games might change according to genre of games played. Various studies have shown different results so in this thesis we will identify and

analyze and provide results which relates to the psychological effects of player this relates to first research question in this thesis.

A Meta-Analysis by Anderson and Dill (2001) found that, playing violent computer games will increase aggressive behavior, emotions, physiological arousal.

” Short-term violent video game increases in aggression are expected by the model whenever exposure to violent media primes aggressive thoughts, increases hostile feeling or increases arousal” (Anderson & Dill, 2000, p. 774).

According to (BECTA) British Education and Technology Agency survey in 2002 to investigate how computer games are used in schools are they efficiently used and to find whether they helpful in schools for education. The result of this survey are, countries like US, Europe, Australia, UK use computer games a lot in schools. Many educational computer games used as education tool in schools to give children’s better understanding and these games are helpful to teach students very quickly. Another research TEEM project, this research has been done with the selection of games which have entertaining pictures, rhymes and teaching students with fun based titles, rhymes. Another Project, Sim City Case Study in this study four schools have been selected to teach numerical skills to students.

### **3. 4 Relevant Literature sources:**

The literature sources we have selected for this study are:

Kalle Jeggers, 2009 (Department of Informatics, Sweden), Journals on Psychological factors influence player's behavior in playing computer games, Publications, we had done internet online search with keywords: computer games, psychological behavior, addiction, self-esteem, children, and Educational computer games.

Gary W. Giumetti and Patrick M. Markey (2007) have done a study on aggression, interaction effects. This study used GAM framework to analyze the effects of violent computer games. In their research Similar to Anderson & Dill's (2000) approach, they have selected 167 participants and the students were asked to fill a questionnaire which will have maximum rating of 1-7 rating levels. Questionnaire had information about age, gender, current study. And remaining questions were related to anger, favorite game would you like to play, amount of time spent on games etc all these questions were given with rating 1-7 so that researcher can easily find correlation between them using statistical methods. All the research done in this area has a format of questionnaire which has rating from 1-7 or 1-10 which is an Aggression Questionnaire (AQ; Buss & Perry, 1992).

In current thesis we are following Aggression Questionnaire (AQ; Buss & Perry, 1992) format to prepare questionnaire for all three Case Studies assumed in this thesis. And in this current study we use a similar methodology of Bushman & Anderson's (2002) which is used to determine whether a violent computer game play increase aggression, distracted sleep, physical fights, psychological effects.

According to the research done on school children's by Douglas, Lynch, Ruh Linder, Walsh (2004) When asked to rate how much violence they like to have in video games on a scale from 1 to 10(1= no violence, 10= extreme violence), the final outcome was individuals who liked average amount of violence (M= 5. 4; s. d.= 2. 73). In this study researcher found different level of variables in between boys and girls, with boys (M= 6. 7; s. d.= 2. 3) preferring higher levels of violence than girls (M= 3. 8; s. d.= 2. 3), ( $t(551)= 14. 2$ ;  $p < 0. 001$ ). Maximum percentage (68%) of boys chose the scale point six or higher, whereas only 22% of girls preferred this much violence in their video games. Only 1% of boys and 16% of girls said they prefer to have no violence in video games. The Questionnaire consist of arguments with teachers, physical fights, and school grades can be seen with ratings from 1-10 (Douglas, Lynch, Ruh Linder, Walsh, 2004).

According to Gary W. Giumetti and Patrick M. Markey (2007) a simple pearson's correlation was evaluated to analyze the relation between aggression, anger, addiction of computer games. According to the research done on school children's by Douglas, Lynch, Ruh Linder, Walsh (2004) When asked to rate how much violence they like to have in video games on a scale from 1 to 10(1= no violence, 10= extreme violence) in a questionnaire and the Questionnaire also consist of arguments with teachers, physical fights, and school grades can be seen with ratings from 1-10 (Douglas, Lynch, Ruh Linder, Walsh, 2004). Finally they found a correlation between individuals play more violent games have more aggression levels rather than individuals who like less violent games and spent less amount of time on playing computer games.

In this thesis we will relate first research question with General Aggression Model to find Pearson's correlation of the variables acquired from the first questionnaire to the first case study and analyze those variables with GAM framework. This research methodology is implemented to find whether computer games affect i. e. first research question.

The Research done in Educational computer games such as, BECTA, TEEM, Sim City all these have shown that children's who played games shown enthusiasm and played games for excess time than required. Most of the students shown eagerness to come to schools and they have been improved good grasping skills to learn.

One survey found that aggressive behavior is related with the amount of time player get involved in playing games. (Lin and Lepper, 1997) A survey has been conducted with teachers and students i. e. a questionnaire has been presented to them and asked to fill them with questions related to amount of time computer games has been played, academic achievement, liking for school etc. According to Lin and Lepper (1997) survey the result was the student's involved more time playing computer games have less academic achievement and aggressive behavior.

In our thesis, the numerical data and variables collected using second questionnaire for second and third case studies are related to the Pearson's correlation and find a relation between educational computer games and students. A similar approach followed by Lin and Lepper (1997) will be used to depict a conclusion for second research question.

## **Methodologies:**

### **General Aggression Model:**

Anderson, Dill and Bushm