

SYNOPSIS OF THE PROJECT

ANTHROPOLOGY AND METHODS OF RESEARCH (MANI-001)

Topic: Psychology of color and emotion in Video Games

Project Submitted to: Indira Gandhi National Open University in partial fulfilment of the requirement for the award of master's degree in Anthropology (MAAN)

Submitted by:

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## DECLARATION

I hereby declare that the synopsis entitled **“Psychology of color and emotion in Video Games”** to be submitted for the Degree of master’s degree in Anthropology (MAAN), is my original work and the synopsis has not formed the basis for the award of any degree, diploma, associate ship or fellowship of similar other titles. It has not been submitted to any other University or Institution for the award of any degree or diploma.

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**ABSTRACT:** Color has an enormous impact in our everyday life. In a highly digitized world and highly electronically infused era, the generation has seen colors everywhere, namely - in arts, sports, fashion, interiors, and what not, that the impact of the colors on human being is quite immense. Color has a great influence in various artistic and commercial pursuits, with its impact on human psychology. We all experience different emotions with different colors, and it has been widely used by different person and professionals at different events and levels to express their feelings and to build the ambience. Color has always been used as a medium to depict or evoke emotions, create feelings, influence psychological behaviors. The psychology of color is based on the mental model and the emotional effects of the human beings in every aspect of their life. Every business now is involved in a complex decision making of what colors to be used and how to implement it in their product or design to create emotion. Starting from their Logo design to the final product manufacturing and packaging or to the services they provide, from the board of director's level to the decision that are made on day to day basic involves color in some or other way around.

This project aims to find out the usage of colors, emotions, and psychology in the gaming industry. It talks about the different colors affect in the mental model of different persons to create different emotional levels and the way color plays the vital role to create the moods and situations. This project seeks and define the importance of color in designing games for the consumers and to investigate the way it contributes to intensifying their engagement in video games. People experience different emotions while playing video games and these emotions are based on different genres of the game.

**KEYWORDS:** Game design, Color perception, Emotions, Video games, Psychological Functioning

**INTRODUCTION:** The game industry plays an important role in the Indian economy as well as the World's economy. As per the report published by the Business Standard article, the pandemic era has seen huge growth in the gaming segment and the market is estimated to reach USD 3.9 billion by 2025 (*The Business Standard- October 5, 2021, Press trust of India, New Delhi*). The gaming sector was not even shaken after the pandemic situation that aroused in the country in 2020. The global gaming industry, which saw a surge in demand during the pandemic was valued over USD 300 billion in April 2021 and is expected to keep growing, according to Accenture (CNBC reports, Mar 8, 2022)

Emotions acts like a catalyst and is a key element in the success of any form of design. In the highly visual world, the impact of color on human beings is pretty immense and thus designers keeping in mind use different colors understanding the psychological impact of it in everyday life. Psychology of colors is not just restricted to a particular region but has a universal effect. As we go around different

geographical places and explore different cultures, we see that different people have different perception and psychology of colors based on their beliefs and cultural values. Experiencing emotions is the main reason behind people opting to play video games. So, it's very important for the game designer and developers to create emotions in the games for the people to keep engaging, and to create an unforgettable experience for the players. Psychological research has shown that music and color play the vital role to create the emotion in player's mind. The internet has had a major impact on how the users interact and communicate now a days. As designers, developers, and curators we will have to be aware of the fact that cultural difference exists, and we will have to take these as a point of concern while developing games or designs. One of the renowned software development companies named Adobe has their own tool named ADOBE COLOR, which is quite a powerful tool that lets the users and the developers and designer experiment and try out different combination and mix and match of colors. Designers and developers who want to use color psychology as an advantage to create or develop games can use these software's. It's an open-source tool which can be used by any professional or student free of cost. It is incredible to know and use the Adobe Color by the professionals and see it in real time by their own how the color is reacting to each other, like the complementary colors reacting with one another. The tool allows to work with 5 different colors at a time and creating a rich color palette which will work in any game development and creating different environment. The psychology of color used in the video game design and development helps the players and the other users interacting during the play time to identify the objects and experience moods, environment, and the drama set behind it to deliver. Color grading plays an important role. Designer uses different tones, hues, saturation, contrast, brightness, darkness to create the mood which in return establishes emotion of the story based on the drama to portray. By the use of different shades and tones of color the developers and the designers guide the players and manipulate their view to the elements which are more important to keep focus on and also create a three-dimensional view of the environment around the gameplay.

The color palette of a game is very important to make it memorable. It can help the players express their emotions through the various characters they can choose in the game. It can also help them perform various tasks in the game by adding different skins and packs to their existing inventory. To make the game more interactive, the players can create their own custom avatars by choosing their hair colors, clothes, and accessories. These can be used to represent themselves in the various environments they choose. Having the option to customize their own clothes and accessories makes the game more comfortable for them. In some games, such as PUBG, the players can choose their own avatar to represent them in the game. They can also buy and own clothes and accessories as part of their purchase. The players can also get free accessories and garments as part of default download. It

has been observed that a lot of Indian youtubers and gamers invest good amount of money in buying royal pass to enter the events that are being organized by the developers and also to buy their custom looks for the avatars. A lot of users have been also found that they earn money by live streaming and super chat of their gameplay. So, we can see that color plays a vital role in terms of how the users and players want to present themselves to the world and bring their digital presence look smart and quirky in the world of online. In the current scenario we can see a lot many online applications like Snapchat being one of them provides a digital avatar where people can use the avatar to represent themselves to their friends while chatting by custom selecting their looks and environment and change their color preferences and all. In the today's world of METAVERSE, where having an online presence is turning out to be a on demand thing, we can see it very clearly that color seems to play a vital role in selecting what sort of taste they keep and how they represent themselves to the world. Things like NFT (Non fungible token) people are buying digital paintings and garments and plots as the near future is going to boom the digital presence. Due to pandemic digital meetings, games, attending school and colleges and office has brought tremendous growth and has changed the mindset of the people and has brought their digital presence to the next level making it so obvious for the users to think about their online way of doing and performing task. Now to do so understanding the psychology of colors becomes the key element to provide their desired look based on the cultural belief and developers are working 24X7 to let their users get the best of their choices.

Our psychology of color now also depends upon the memories we have. Like a lot of us select certain colors as they have positive memories associated with it or may sometimes dislike certain colors as some negative memories are associated with it. Now understanding what colors can depict what mood the developers do some research before launching their products or games in certain region. Colors are so important for people that they can easily associate the color with their religion, culture, political views and so many other ways. So, it's very important for the developers or the designer to do some extensive research while opting for some colors and associate them with the certain aspects. The main challenges of the video game developers or designer is to make the players understand the aims, abilities, and the possibilities of the game. Without giving them the proper instructions popping out after some interval of time. As for example if there is certain update is required to be done by the players the developers which they have made to the app for fixing up any bugs or bring some notifications they simply put a red color dot in the icon to make the user understand that there's some notification waiting for them to focus on, and by clicking there they can simply know what actions are required. Ultimately the psychology of the color in video games is more practical than any other art form and still it manages to give immense pleasure to the gamers by applying it.

**SCOPE OF THE STUDY:** Due to the lack of the study resources in terms of time and money, etc., the study only covers the psychology and emotion of the colors, the players interact and experience while playing video games in mobile phones, PCs, and Tabs, in around the Jorhat district of Assam. In this research project the discussions will be about the emotions that are being evoked with different colors and the user end experiences that the players have. The project will examine to what extent the colors could influence a player's emotion in the game play and the ways they could enjoy the entire gameplay and the factors and psychology of the colors that make them spend time over the games. There's a very less amount of research being done relating to the player's performance in the game play due to the color theory or emotions. By investigating or interviewing the users and the player and then by discovering any real time impact of the colors in the player's performance can being revolution to the gaming industry and add new potential elements for the designers and developers to add different levels of real time experience in the game play for the future games.

**OBJECTIVE OF THE STUDY:** The objective of the study of the said domain in terms of the Color psychology and emotions are –

- I. To investigate and understand the different ways the colors interact to user's cultural views and thoughts and its psychological affect in their mood and behavior.
- II. To investigate and understand the process of colors drawing their attention towards the point of emphasis while playing the video games and to monitor the way they react to it.
- III. To study the visual aspect of color and the way they identify certain places and environment as a signage during the game play.
- IV. To study different colors reacting to the overall performance of the players during the game play
- V. To explore the different kinds of emotion that the user can relate to with the real time experience.

#### **LITERATURE REVIEW:**

- i. **Jonathan Frome, University of Georgia (2007)** While playing the gameplay the players experience emotions in the form of *Game* and *Narrative*. Now to understand these emotions

is detail we see that Jonathan Frome, a researcher the University of Georgia, has created a model to account emotions of players. As per his model he claims that there are many ways how players can stumble upon their emotions. He states that game emotions can be thought of as a competitive emotion which are generated by winning or losing the game. He also states that while playing in group, game emotions can be linked to the satisfaction of other's failure, loyalty to the team members or saving or failing to protect their team from dangers.

- ii. **Jude J.L. Martinez, Erwin Adi, Prima, BINUS University, Indonesia (2012)** The fun of the game can sometimes be the X factor that can only be experienced by the individual, but there are other ways to achieve it through which the other factors that affect the game such as game play, visuals, storyline, etc. According to them color is one of the important aspects in designing an interesting game to meet the needs of today's gamers. According to their theory distinct Colour and Colour Situations could help the game designer create a game that could indulge and stimulate excitement in the player's mind and try to simulate the same situation for the player with the situation inside the game, so the game could have a more realistic nature.
- iii. **Erik Geslin, Laurent Jegou, Danny Beaudoin, France (2015)** The results of the research conducted by them imply that links exist between feelings of joy/sadness and environment properties: brightness, value, saturation, chroma, and lightness. For the brightness of images, the greater the color Saturation is, the more positive the valence of these feelings is. This corroborates previous studies which also showed that images leading to the perception of joy tend to be brighter, more saturated, and having more colors than images of sadness in a virtual environment. Their study proposes a methodology for defining the chromatic atmosphere of interactive environments based on a wide range of inducible emotions.
- iv. **Evi Joosten, Giel van Lankveld, and Pieter Spronck, Tilburg University, Netherlands (2010)** According to the research carried out by them, they found out significant effects on emotional responses for the colors red and yellow. In their experiment they found that red elicited a highly aroused, negative emotional response, and yellow elicited a positive emotional response. We found these color effects prevalent mainly with inexperienced videogame players. According to them the game designers can employ certain colors to manipulate player's emotions, specifically those of novice players.

- v. **Andrew J Elliot, Maier (2012):** color-in-context theory, which draws on social learning, as well as biology. Some responses to color stimuli are presumed to be solely due to the repeated pairing of color and particular concepts, messages, and experiences. Others, however, are presumed to represent a biologically engrained predisposition that is reinforced and shaped by social learning. Through this social learning, color associations can be extended beyond natural bodily processes (e.g., blood flow modulations) to objects in close proximity to the body (e.g., clothes, accessories). Thus, for example, red may not only increase attractiveness evaluations when viewed on the face, but also when viewed on a shirt or dress. As implied by the name of the theory, the physical and psychological context in which color is perceived is thought to influence its meaning and, accordingly, responses to it. Thus, blue on a ribbon is positive (indicating first place), but blue on a piece of meat is negative (indicating rotten), and a red shirt may enhance the attractiveness of a potential mate (red = sex/romance), but not of a person evaluating one's competence (red = failure/danger).
- vi. **Kyle Brennan, The Guildhall Southern Methodist University, (2011):** Color is useful in helping to create the visual style of a level or to create the sense of a certain mood or feeling within a level. Color also provides subtle clues to players as where to go or what to do in a level. Player performance is defined in this study by the number of times a player dies and the time it takes him to complete the level. Answering this question is important in a couple of ways. First, while there is a good amount of research done on how color affects a person's performance in everyday tasks, there is not a whole lot of research on how color specifically affects a person's performance in a video game. Hence, this work is important in providing additional research into the subject matter. Another aspect of the work's importance deals with level design and the game industry in general. Learning whether or not color may affect a person's performance within a video game is an important step in further learning ways in which designers may influence the way a person plays a game as well as influencing difficulty within a level. This study furthers research on what affects player performance in a video game as well as how a level designer may use color to further understand and influence difficulty within a game.

## **METHODOLOGY:**

**RESEARCH DESIGN:** The descriptive-cum survey approach will be used; it will be tested using both analytical and empirical methods simultaneously. Using both the quantitative and qualitative information are the data source that will be used in the study of the research project.

**BACKGROUND AND RECENT DEVELOPMENTS:** Empirical work on color psychology functioning dates to the 19<sup>th</sup> century. Their work features from its inception to the past decade. It has been found that major methodological problems which has been prevented from happening rigorous testing and clear interpretation. After going through all the research papers, its has been noticed about the understanding that its impossible to know what precise combinations actually bring out the emotions in the players. As per the model created by *Frome (2007)*, game emotions can be thought of as a competitive emotion which are generated by winning or losing the game. He also states that while playing in group, game emotions can be linked to the satisfaction of other's failure, loyalty to the team members or saving or failing to protect their team from dangers. Whereas *Evi Joosten, Giel van Lankveld, and Pieter Spronck, Tilburg University, Netherlands (2010)*, significant effects on emotional responses for the colors red and yellow. In their experiment they found that red elicited a highly aroused, negative emotional response, and yellow elicited a positive emotional response. As per the research carried out by *Jude J.L. Martinez, Erwin Adi, Prima, BINUS University, Indonesia (2012)*, The fun of the game can sometimes be the X factor that can only be experienced by the individual, but there are other ways to achieve it through which the other factors that affect the game such as game play, visuals, storyline, etc. According to them color is one of the important aspects in designing an interesting game to meet the needs of today's gamers. According to their theory distinct Colour and Colour Situations could help the game designer create a game that could indulge and stimulate excitement in the player's mind and try to simulate the same situation for the player with the situation inside the game, so the game could have a more realistic nature. Thus, the aforementioned findings and research represent important contributions to the literature on color and psychological functioning and highlight the multidisciplinary nature of research in this area.

**SAMPLE SIZE:** A total of 50 samples will be chosen for the study. Purposive section method will be considered for the selection of the samples. Those sample who are regular gamers will only be considered to get the correct information.

## **SOURCES OF DATA COLLECTION:**

**PRIMARY DATA:** The study relies heavily on primary data. The basic data for this study will be gathered by conducting a survey of the samples. Questionnaires will be administered to gather primary data on the subject.

**SECONDARY DATA:** Secondary data sources include marketing records, customer account information from internet, YouTube videos, and product purchase and use data. Live streaming, online events, and talking to the gamers, and all examples of secondary data.

## **EXPECTED LIMITATIONS:**

- I. There're just 50 people in the sample thus the findings may not be completely representative of the industry as a whole.
- II. Jorhat was only considered for consideration in the research, which means that its conclusions may not be completely representative of the whole industry. As a result, it's reasonable to assume that the conclusions were based on data collected from the sample primary data and collective secondary data collected from different sources.
- III. As a result, accuracy of the research findings is dependent on the sample units' ability to accurately reveal the information needed to conduct the study.

**CONCLUSIONS:** The future of the game industry has a potential. We investigated that the use of color in the gameplay may influence the player emotionally. We can see that developing or designing a game cannot be based out all of a sudden. It needs extensive research and testing which goes through different levels and needs some market research and incorporation of new ideas and concepts. We all know people play games for having fun, creating some memories and to have fun the game should have some exiting environments and avatars, role play, drama. The results of this research have shown along with observation results prove that color is one of the important aspects in designing an interesting game. With the advancement of technology, in computer software, the demand for making interesting games with interesting visuals is also increasing day by day. With above cited research and literature review we can state that Color with Situations and emotions could help the game designer create a game that could indulge and stimulate excitement in the player's mind and try to simulate

the same situation for the player with the situation inside the game, so the game could have a more realistic nature.

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