

The Unreal Reality of Gamification: Meta Leaps in the Gaming Universe

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ABSTRACT

Back in 1964 when renowned communication theorist Marshall McLuhan announced that the world will soon morph into a “global village” little did he realise how rapidly this chance prediction would morph into a post-modern reality.

In an increasingly interconnected world digital manifestations have made inroads into every sphere of communication and media activities, and nowhere is this more prevalent than in the metaphysical landscape of gaming and virtual reality where technologies, sensory experiences and user navigated content all syncretically converge into a single immersive experience that transcends simplistic computerised simulation.

Ever since the turn of the century, technology, programming and gaming have made quantum leaps in areas of content, ease of use and compactness, catapulting this once ambling, ‘quietly recreational’ activity into a multi-million dollar industry that is now snowballing into an unmanageable leviathan. The recently launched Apple Vision Pro, a virtual reality headset that is quite literally a game changer, redefines the meaning of immersive experiences. AR and VR alone boosted GDP globally from 1.5 trillion in 2030 to an estimated \$ 476.4 billion in 2025. In India alone, the gaming industry encompasses 500 million potential gamers and a net worth of \$1 billion, prompting even cricketing superstars like Virat Kohli to invest in this burgeoning Megacorp.

This study investigates the phenomena of gaming and the Metaverse in the Indian context, the extent to which it is understood and engaged in. The discussion section reviews the

the possible psycho-social consequences of excessive gaming. The study arrives at definitive conclusions derived from a quantitative approach to this subject; utilising SPSS tools on primary data gathered from college students, to test the four hypothesis that have been posited.

Keywords: Metaverse, Immersive, Gaming, Bitcoin, Augmented Reality, Virtual Reality, Blockchain, Cryptocurrency, Megacorp.

Introduction

Setting the context

Who does not enjoy games? And with the onset of the digital revolution, gaming naturally seemed to take precedence over other novel digital innovations. The tools were different, and so were the gadgets, but the instinct to score, to achieve, to gain victory over your competitor, these primeval urges remained, and so the digital gaming ethos ushered in a new desktop revolution for trigger happy teenagers, with killer instincts and commando type reflexes.

The first known recorded digital game was created by Steve Russell in 1960. This was a science fiction game called “Spacewars”, and created waves of popularity as soon as it was launched. The arcade game industry whose market was steadily rising reached an all-time high between 1978 to 1990, but it was post the nineties when the gaming industry really took off. Sony Corporation launched the now legendary PlayStation and simultaneously during this time, Nintendo released a 64-bit console, named naturally, the Nintendo 64. Gaming being not only a creative, but also a lucrative industry, developers spend considerable time in research to create games that not only challenged intellectual and physical capabilities of the players, but also ones that are historically and contextually relevant.

“While the commercial games and educational materials do not represent a ‘gamic mode of history’ or scholarly game, they do offer insight into how the scholarly game can be researched and designed (Clyde, Hopkins, and Wilkinson 2012, 9; Fogu 2009)”.

Many of the games designed and played were indicative of the times the people lived and played in. The popular game, “Shogun - Total War” used backdrops from Ancient Rome and Medieval Europe. The game designed by Creative Assembly is grounded in solid secondary source research and hence has proved to be very popular amongst numerous fans. Many of these games also provide history education as value addition and a secondary benefit apart from the obvious ones like sharpening physical and mental acuity and digital dexterity.

Although the ancient game of Nim was played at the New York World’s Fair in 1940 by nearly 50,000 people, this was more or less an experimental beginning. Two games released in 1966 and 1967 by gaming companies Sega and Taito, stimulated the public interest in this new form of recreation, but gaming did not make much progress until Ralph Baer released the prototype of “The Brown Box” in 1967. Although many

mistakenly attribute the Giant gaming company Atari to be the “father” of modern online gaming, it began essentially with the Maganavox Odyssey in 1972.

Kapell and Elliott argue that,

‘historical video games allow for an in-depth understanding not just of facts, dates, people, or events, but also of the complex discourse of contingency, conditions, and circumstances, which underpin a genuine understanding of history’ (402–409)[1].

2. Research Design and Methods

Keeping in mind the research objectives, quantitative research was adopted for the research. A pilot study was undertaken to determine the scope of the research and the direction in which the study should be headed. The pilot study comprised a sample size of twenty UG and PG students. Simple Random Sampling was the method adopted for the selection of respondents. The study was conducted online and the results collated into excel files which were later analysed using statistical methods through SPSS. Twenty-two questions utilised a scale (Likert scale) which was used to confirm attitudes and concepts about gaming. The actual extent of gaming was obtained through the other multiple choice questions. To measure the six variables, **six constructs** were adopted out of which arose the five research questions that were formulated. From the research questions three objectives were framed as enumerated below:

Objectives

1. To gauge what exactly students understand by the Metaverse
2. To gauge the extent of gaming by students
3. To determine the risks of gaming as an obsessive addiction

Based on these objectives two null and alternative hypothesis, forming a total of four, were posited. The hypothesis are stated below:

Hypothesis (Null and Alternative)

1. H_0 : Students have little or no knowledge of Metaverse
 H_a : Students are knowledgeable about Metaverse
2. H_0 : Students spend very little time on Gaming
 H_a : Students spend most of their time on Gaming
3. H_0 : Very little chance of Gaming becoming addictive

H_a : High probability of Gaming becoming addictive

In order to test the hypothesis, it was decided to frame constructs for each of the hypothesis, with each construct having five (or six) items to measure these constructs. Before the final questionnaire was administered to a target sample population of two hundred students, the pilot questionnaire was first tested for reliability and internal consistency. A standard measure for this statistic is Cronbach’s alpha. But before this was applied, questions were grouped together according to what construct they were measuring.

It was found that for most of the question sets, Cronbach’s alpha was higher than the required minimum of 0.70 so the questionnaire was rated as reliable and could be used as a basis for the final questionnaire with a few modifications.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.753	.764	6

Table 1. Cronbach’s alpha of pilot study

3. Final Study

A target sample size of 200 was sought as sufficient for purposes of the study, but owing to constraints of time and insouciant responses from students, the final figure arrived at was 132 respondents. The table below confirms the reliability of the questionnaire.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.839	.842	21

Table 2. Cronbach’s Alpha (Main Study)

In order to test the three enumerated hypothesis, six constructs were determined. In relation to gaming and the Metaverse, these were (a) Awareness (b) Extent of Gaming (c) Reasons for Gaming (d) Limited Perception (e) Addiction (to gaming) and (f) Perceived Benefits.

The first few tests conducted were to determine demographic distribution of the sample population

To simplify tabulation of the games, versions of the same game were clubbed together under one heading. Thus different versions of a game like Need for Speed or Asphalt were regarded for the purposes of the study as one game only. The responses obtained are displayed below:

		Responses	
		N	Percent
Games Played	MINECRAFT	32	9.1%
	VALORANT	46	13.1%
	GAME OF THRONES	20	5.7%
	THE DEAD REDEMPTION	6	1.7%
	THE LAST OF US - II	7	2.0%
	ASPHALT 8, 9	8	2.3%
	CONTROL	3	0.9%
	MORTAL COMBAT	5	1.4%
	BGMI	21	6.0%
	CS:GO	10	2.8%
	APEX LEGENDS	7	2.0%
	FORZA HORIZON	5	1.4%
	FIFA	3	0.9%
	CLASH OF CLANS	10	2.8%
	TEAM FIGHT TACTICS	2	0.6%
	POKEMON	3	0.9%
	RAINBOW SEIGE	1	0.3%
	GRAND THEFT AUTO	35	9.9%
	NEED FOR SPEED	5	1.4%
	GODS OF WAR: RAGNAROK	9	2.6%
	PUBG	17	4.8%
	PRINCE OF PERSIA	6	1.7%
	SEKIRO	1	0.3%
	BALL POOL	1	0.3%
	CANDY CRUSH	6	1.7%
	SPIDERMAN	5	1.4%
BATMAN	2	0.6%	

	TEKKEN	5	1.4%
	FORTNITE	7	2.0%
	CALL OF DUTY	18	5.1%
	WAR THUNDER	1	0.3%
	SUDOKU	1	0.3%
	WARCRAFT	3	0.9%
	TEMPLE RUN	3	0.9%
	SUBWAY SURFERS	8	2.3%
	LUDO	4	1.1%
	CRICKET 22	2	0.6%
	GENSHIN IMPACT	12	3.4%
	TOMB RAIDER	3	0.9%
	LEAGUE OF LEGENDS	2	0.6%
	GHOST OF TSUSHIMA	4	1.1%
	RESIDENT EVIL	3	0.9%
Total		352	100.0%

Table 3. Distribution of games played by students

In order of popularity, Valorant emerged as a clear winner with a count of forty-six, followed closely with Grand Auto Theft with a count of thirty-five and Minecraft was not far behind with thirty-two. The rest of the games had varying levels of popularity. The percentage of popularity of the different games can also be visualised as is shown in the below graph.

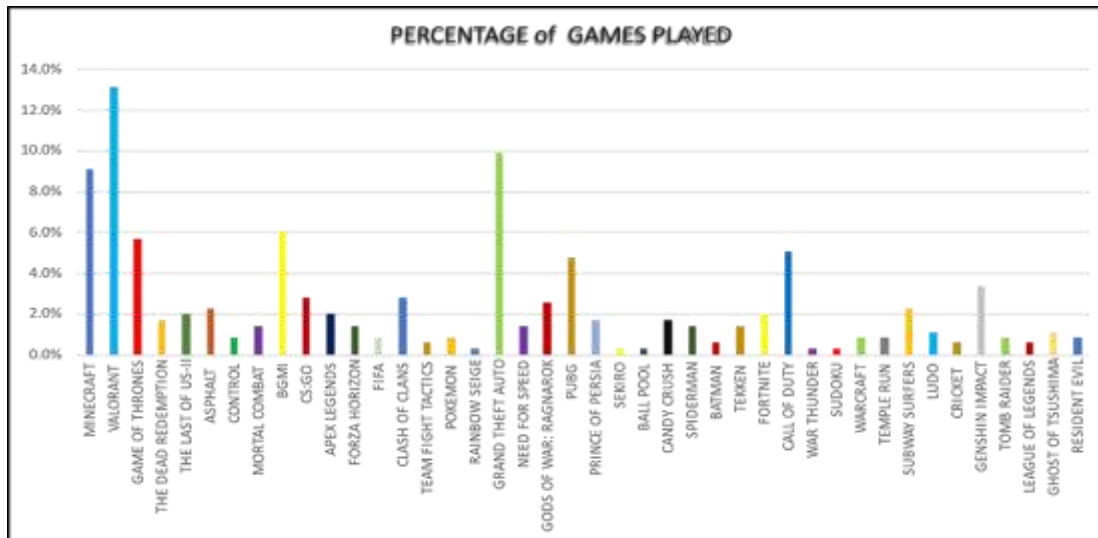


Fig 1. Percentage of games played (both gender)

Q1. Connection between Gaming and Metaverse				
	Frequency	Percent	Valid Percent	Cumulative Percent
Very close connection	67	50.8	50.8	50.8
Gaming and Metaverse are the same thing	7	5.3	5.3	56.1
No connection at all	8	6.1	6.1	62.1
Metaverse is much more than gaming	50	37.9	37.9	100.0
Total	132	100.0	100.0	

Table 4. Connection between Gaming and the Metaverse

Results & Discussion

Tests conducted later were to ascertain student’s general awareness and knowledge of the Metaverse and its linkages to gaming. It is fairly evident from the above table that students had spent considerable time dabbling in the Metaverse and roughly half of the students perceived a close connection between gaming and the Metaverse. Total number of cases was 132 and the valid percent was 50.8%. Graphically this can be seen below.

Cross tabulation to analyse differences between male and female perceptions about relationship between the two variables revealed the following data:

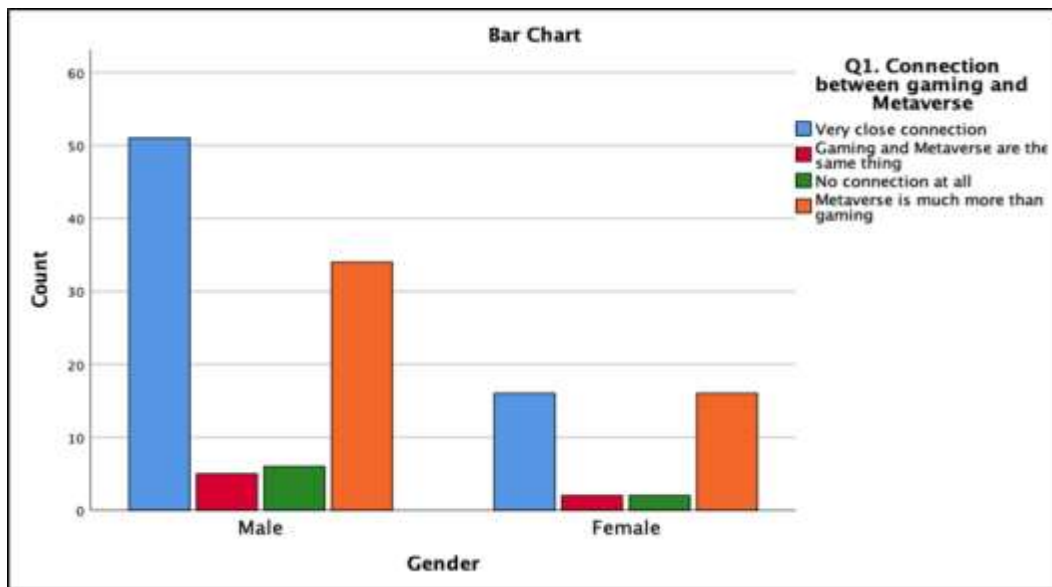


Fig 2. Gender segregated chart showing perception of connection between gaming and the Metaverse

Since the ratio of females to males was much less, 16 females as against 51 males, the heights of the bars vary but we can see clearly that females were similar in their views regarding the connection between the two variables as well as they felt that the Metaverse was much more than just gaming, various males agreed that the two were closely connected but did not feel that the Metaverse was much more than gaming as compared to females.

Two other questions aimed at assessing students' overall awareness of Gaming and Metaverse were whether they believed that as Gaming grew, the Metaverse would also concomitantly expand; and the other was whether they believed (or perceived) that gaming in the Metaverse was an expensive business (even if payments were transacted through crypto currency, finally the virtual currency had to be traced back to a source of real money).

Frequency and histogram responses to the above questions produced the following data:

Q10. As the Metaverse grows, will gaming will also grow?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.3	2.3	2.3
	Disagree	4	3.0	3.0	5.3
	Unsure	28	21.2	21.2	26.5
	Agree	64	48.5	48.5	75.0
	Strongly Agree	33	25.0	25.0	100.0
	Total	132	100.0	100.0	

Table 5. As the Metaverse grows, will gaming also grow?

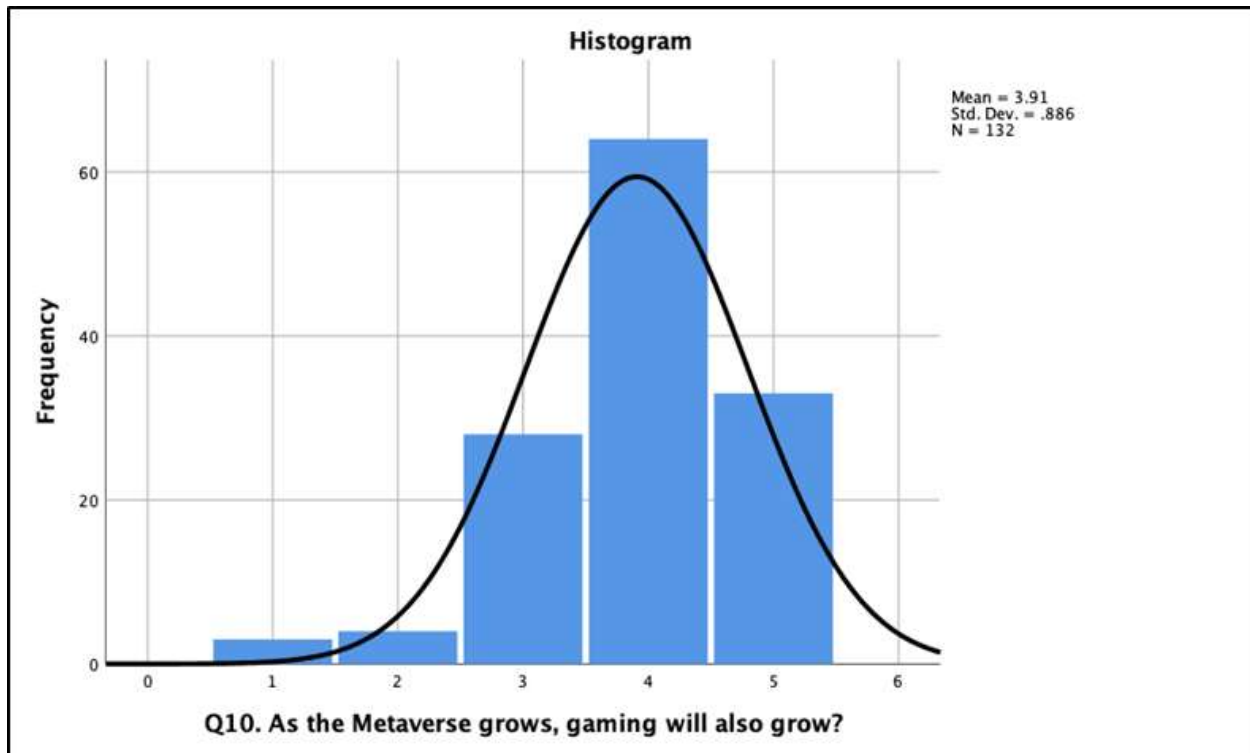


Fig 3. Histogram response to gaming growing along with the Metaverse

As can be seen from Table 6, a high frequency of students (64) agree that as the Metaverse grows, gaming will also grow. It is not sure whether this feeling stems from spending a lot of time on the Metaverse, and exploring its potential or is just an informed guesstimate. It is clear from the graph, that they expect the Metaverse to grow rapidly and also link the gaming industrys' future to this phenomenon.

The curve follows a normally distributed curve, with most of the responses clustered around the centre and few dissenting voices.

4. Testing of Hypothesis

H₀ : Students have little or no knowledge of the Metaverse

To test the first hypothesis, Q1, Q10, Q11, Q12 and Q13 were all framed in such a way that they would test awareness of the students on the double parameters of gaming as well as the Metaverse and linkages between both. Frequency analysis revealed that 50.8% of the respondents (mixed) felt that there was a close connection between gaming and the Metaverse and they also felt that there was much more to the Metaverse than just gaming. Also to the question as to whether gaming would grow if the Metaverse grows, 48.5% agreed and 25% Strongly agreed, which indicates that their knowledge of the Metaverse is more than

perfunctory. Also when asked if gaming in the Metaverse is an expensive business again, 42.4% agreed and 12.8% Strongly agreed, both figures are much higher compared to the negative responses, which shows that students are actively engaged in the Metaverse and are also knowledgeable about it. To Q.12, 60 students agreed and 17 strongly agreed (out of 132) which again indicates that they are very active in gaming and Metaverse related activities.

Hence based on the cumulative results of student responses, we can safely conclude that the Null Hypothesis that students have little or no knowledge of gaming and the Metaverse is rejected and the alternative hypothesis accepted, that students are knowledgeable about the Metaverse.

H₀ : Students spend very little time on Gaming

To test this hypothesis, a construct was used based on questions Q2, Q3, Q20 and Q25. The first two measure the actual time spent on gaming i.e number of hours as well as the number of days. The other two questions measure attitudinal dispositions. Are the students more inclined towards social activities (such as sports, hobbies etc) or do they prefer to spend their free time on games. The cumulative result of these tests will provide us with enough evidence to either support or refute the hypothesis.

Q2. How many hours do you spend on games per day? (Crosstabulation)						
		<2 hours	2-4 hours	4-6 hours	> 6 hours	
Gender	Male	54	26	11	5	96
	Female	25	7	2	2	36
Total		79	33	13	7	132

Table 6. Gendered response to hours spent on gaming

Graphically, the gendered response to the question is visualised below:

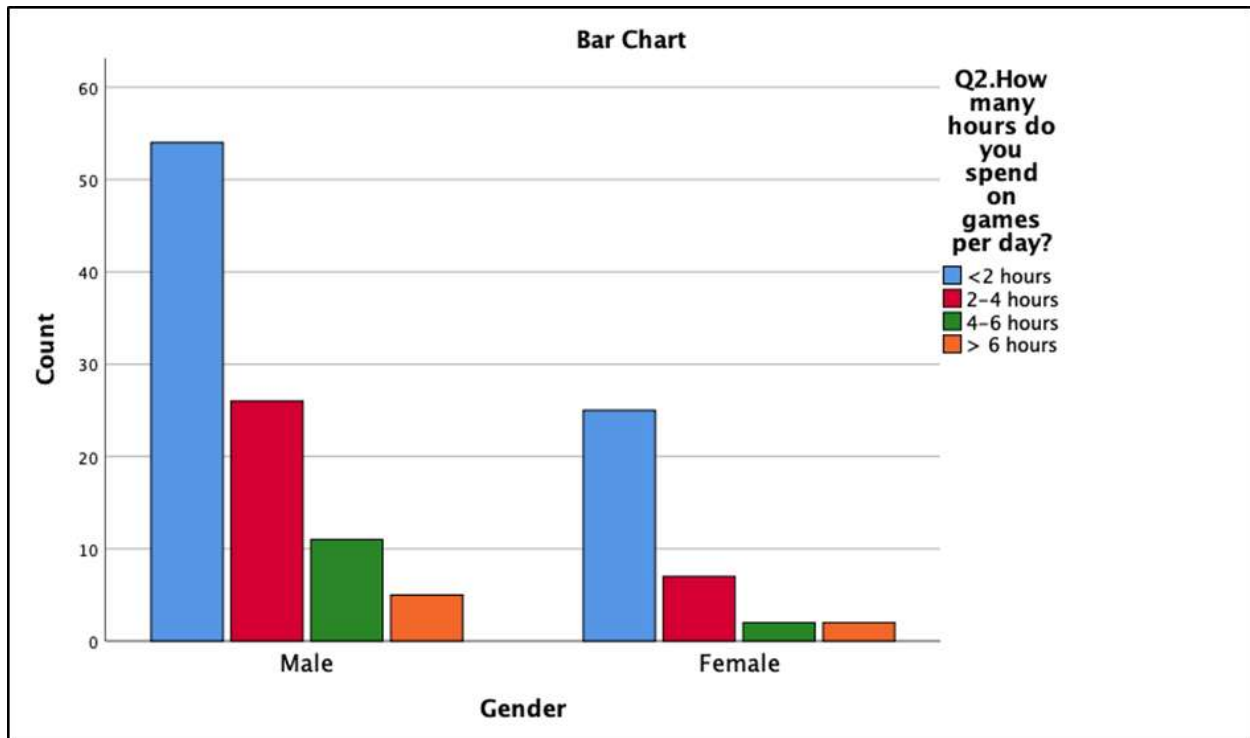


Fig 4. Gendered response to how many hours are spent per day on gaming

There are no missing cases and the table above clearly shows that all the students do engage in gaming, both male and female. However, it appears that gaming is not such a priority with them, and the proportion of time spent on actual gaming is less both for males and females, possibly because of college and other activities. 54 Males and 25 females spend less than two hours on gaming, but when it came to spending 2-4 hours on gaming there was a noticeable difference between males and females with 26 males and only 7 females in this category. The proportion of hard core gamers – those who spent more than 6 hours per day on gaming was very few. Only two females and five males out of the one hundred and thirty-two respondents.

In terms of percentages, 68.4% males spent less than two hours and 31.6% females followed the same pattern. With regard to the number of days spent per week on gaming, again a cross tabulated result displayed the following results:

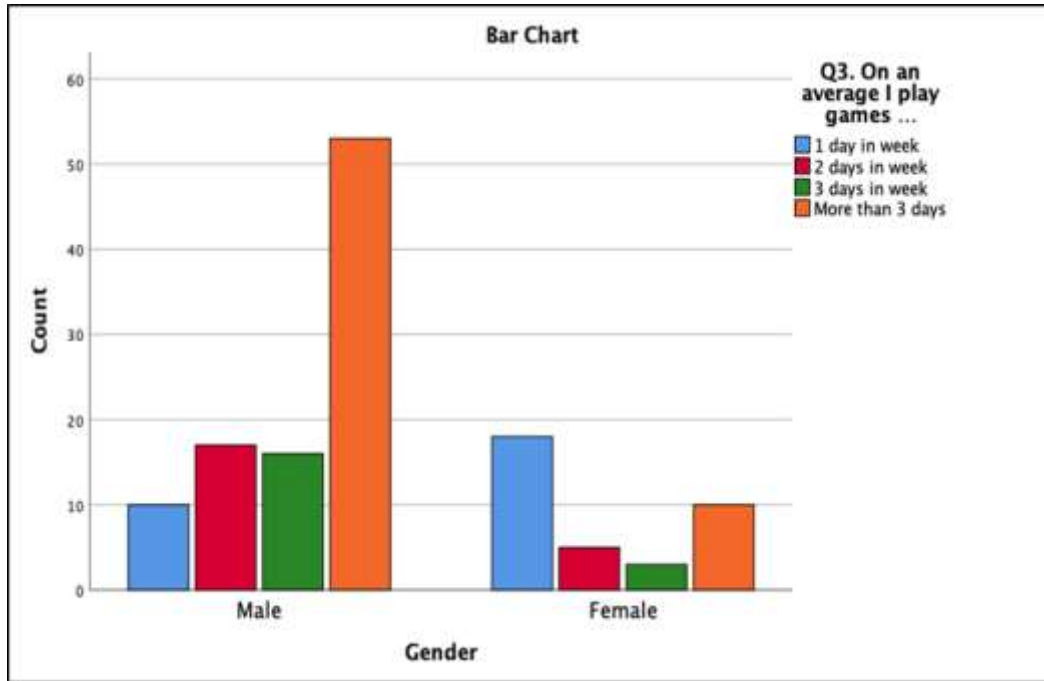


Fig 5. Gendered response to average time spent on gaming

It is very evident, visually, even at first glance that there are far more males who play for more than 3 days in a week as compared to females. In terms of percentages, 84.1% of males fall in the orange category, whereas for females it is 15.9%.

In terms of frequency of total number of students and the percentage of time spent per week on gaming, running tests through SPSS yielded the results enumerated below:

Q3. On an average I play games ...					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 day in week	28	21.2	21.2	21.2
	2 days in week	22	16.7	16.7	37.9
	3 days in week	19	14.4	14.4	52.3
	More than 3 days	63	47.7	47.7	100.0
	Total	132	100.0	100.0	

Table 7. Frequency of time spent on gaming, per week

In terms of percentages for both cases (males and females) the percent of time spent in a week playing games was high for two days in a week and for more than three days. The highest percent was for more than three days which revealed that nearly half of the sample population (47.7%) spent **more than three days** playing games.

Analyzing both questions, we can safely conclude that although the time per day spent was less for both males and females, in terms of the time spent per week, a high frequency of students (63) spent more than three days, and hence the null hypothesis that students spend very **little time** on gaming is refuted and the alternative hypothesis that students spend most of their time on gaming is accepted.

H₀ : Very little chance of Gaming becoming addictive

To test this hypothesis the construct of gaming becoming addictive was subjected to rigorous testing by utilizing questions, Q19, Q20, Q21, Q22 and Q23. The questions essentially were framed to check students’ attitude towards society, whether they preferred social engagements to gaming or vice versa and also how much time and money they spent on their hobby. To whether they preferred games to sports or other physical activities, the students recorded their responses as follows:

Q19. I prefer games to sports or any other form of physical activity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	8.3	8.3	8.3
	Disagree	41	31.1	31.1	39.4
	Unsure	30	22.7	22.7	62.1
	Agree	37	28.0	28.0	90.2
	Strongly Agree	13	9.8	9.8	100.0
	Total	132	100.0	100.0	

Table 8. Scaled response of preference to gaming over sports and other physical activities

31.1% disagreed that gaming was better than physical activities and at the same time 28% preferred gaming to sports and other recreations. Since the responses here are mixed with similar weights, it was decided to proceed with tests to other questions.

Q20. I have to play every day or I feel something is missing in my life!								
			Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree	TOTAL
Gender	Male	Count	12	31	16	22	15	96
		% within Gender	12.5%	32.3%	16.7%	22.9%	15.6%	100.0%
		% within Total	57.1%	68.9%	69.6%	81.5%	93.8%	72.7%
	Female	Count	9	14	7	5	1	36
		% within Gender	25.0%	38.9%	19.4%	13.9%	2.8%	100.0%
		% within Total	42.9%	31.1%	30.4%	18.5%	6.3%	27.3%
Total	Count	21	45	23	27	16	132	
	% within Gender	15.9%	34.1%	17.4%	20.5%	12.1%	100.0%	
	% within Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 9. Scaled response to students feeling they are missing something if they don't play every day

It can be seen, visually very clearly, that students disagreed to the question that they have to play every day or they feel something is missing out of their life. This makes it evident that while the students did enjoy playing games, it was not a compulsive behaviour for them that made it almost a precondition for life. In terms of percentages, 34.1% expressed their disagreement out of a total of 132 cases. There were no missing responses.

Crosstabulation of the above question revealed that both males and females disagreed that gaming was their only reason for existence, but it was interesting to note that responses radically changed for males and females when it came to “Strongly disagree” and “Strongly agree”. 57.1% of males strongly disagreed with this statement, but surprisingly a very high percentage of them, 93.8% “Strongly agreed”, meaning that they felt something was missing from their lives, if there was no gaming. In the case of females, there was no ambiguity as to their response to this question. 42.9% “Strongly disagreed” and only a very small percentage of the total number of cases, 6.3% “Strongly agreed” to this question. This was to be expected as other research studies have revealed that females by and large tend to be more gregarious in nature and have other interests and hobbies apart from computers and computer games.

5. Challenges of a Nascent Metaverse

Despite all the popularity of gaming in and out of the Metaverse, these utopian fantasies are not without their dark side. Many studies have been conducted in the west of the impact of games on children, especially in promoting aggressive and violent behaviour, and these studies were particularly pertinent in the nineties when games like Doom, Golden Eye, Diabolo featured prominently on the gaming horizon.

Apart from emotive and cognitive challenges, there are numerous technological ones as well. Present day games, animations and corporate videos feature such high end 3D graphics and videos created in gaming engines such as Unity and Unreal engine, that all but the most high end computers and processors can handle the raw computational power needed to deliver fully rendered animations in real time. Even if working on unidimensional time space coordinates, the computing power, low latency and bandwidth that is required of these high end systems is extremely taxing, and when gaming spaces turn multidimensional, then technological challenges become precipitously complex.

One of the biggest challenges of the Metaverse is the fact that the amount of data that is collected about your privacy and surroundings, can reach unprecedented levels. When wearing headsets or other VR/AR gadgets, data is collected from your eyes, hands and body movements which translates physical movements, whether it be saccadic eye patterns or the movements of your fingers, into digital data. Furthermore, physical body movement data, data related to your surroundings such as your body weight, height, temperature, heart beat etc. are being recorded and transmitted. It is often undesirable, that such data be communicated to others.

Another danger is that because of the extreme sense of realism created in virtual environments, extremist factions can strategise a simulated attack on selected targets, say for example, the twin towers in the US, and not only create detailed strategic plans, plot escape routes but even estimate the extent of casualties inflicted. And plot hyper realistic simulated exercise drills. Such detailed simulation plans often precede an actual strike, enabling terrorist groups to execute their plans to perfection, right down to the smallest detail. The possibilities of this horrendous and diabolical engagements, planned and executed in 3D space, is of great concern to intelligence agencies, especially government controlled anti-terrorist organisations.

5.1 Health Challenges

Television posed the first threat to socio-mental health and later as gaming becomes more ubiquitous and virulent, the effects of prolonged gaming on health, both physical as well as mental, has been documented in several books, magazines and television reports.

Eyesight deterioration, poor posture and gastric ailments are some malaises that have been observed and recorded. Alienation effects, anti-social behaviour and isolation tendencies are other side effects targeting serious gamers, and often these traits or symptoms either go unnoticed, or are disregarded and trivialised till it is too late and the gamer becomes a serious victim of trauma or depression. Studies have found that the combined effects of gaming and social media are playing havoc with physical and mental health and in numerous cases, leading to depression, narcissism, stress and other psycho-social disorders which if untreated can lead to drug addiction, clinical depression and in extreme cases, even suicide (Müller, K. et al., 2014).

6. Conclusion

The Metaverse is currently an embryonic topic, and globally, debates rage ranging from puerile and bigoted misconceptions to genuine, non-selfish concerns. But certain facts are immutable. The Metaverse is not only here to stay, but will proliferate in quantum leaps, even as quantum computers break through the ocean of disbelief and become a evanescent reality. The reason is because to catalyse the integration of virtual reality and reality, the support of key technologies is both imminent and preeminent. Furthermore, twin technologies are vital to “build a real mirror world” operating on big data technology coupled with AI, all of which are enmeshed into a virtual world rerouted through block chain technology [7].

As governments and tech-driven companies contest the weaponising of technology, it is important to remember that it is not technology that is the “enemy at the gates”. The Metaverse and gaming components within it, are simply technological by products that cannot exist without the consent of the creator. Ultimately, it is human beings - scientists, IT professionals, corporate houses and governments that shape which direction the Metaverse and associated evolving nascent technologies will be headed. As long as the Metaverse grows, reinventing itself periodically, both online and offline gaming will witness an inestimable revolution. In Interoperability, scaling, decentralisation, investment opportunities and immersive realism - on such an unprecedented scale and magnitude that words such “science fiction” and “unimaginable” are rendered meaningless and redundant.

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