

# Impact of Meta verse on future educational space in India

Shaik Gaffar, Dr.Suresh Nanda Kumar

II PGDBM, Xavier Institute of Management and Entrepreneurship, Chennai, India  
Senior Assistant Professor, Xavier Institute of Management and Entrepreneurship, Chennai, India

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**ABSTRACT:** After affected by COVID-19, the pattern of teaching changed especially from physical classes to online classes. The purpose of the current study is about how Metaverse can affect and change present teaching style. For this 176 responses was collected through questionnaires and stratified sampling techniques was adopted. Our analysis revealed that most of the students showing positive response for adopting Meta verse in Indian education

**Key words:** Meta verse, Augmented Reality (AR), Virtual Reality (VR), Extended Reality (XR)

## I. INTRODUCTION

Now a days Meta verse is the Centre of attraction especially after Meta (formerly known as Facebook) announced its interest in education sector. While there are so many researches conducted on Meta only on qualitative data and to cover this gap we study conducted a systematic quantitative study on the Meta verse. And the results which will obtain from above analysis will be useful for applying Meta verse in Indian education sector. All the studies which was conducted only concentrated on the physical classes like mobile learning and e-learning and there is very less information about Meta verse in education sector. This study will give the direction can we implement Metaverse in the education sector

## II. LITERATURE REVIEW:

Ahmed Tlili and Ronghuai huang (2022) in their article they says that origin of the meta verse like it started in 1992 from scientific novels such as snow crash and in 2011 from movies like ready player one. And it became popular when Mark Zuckerberg announced metaverse project in October 2021. And also they explained about meaning of the metaverse which means meta transcending with verse which means parallel or virtual environment linked to the world

Kathy hirsh-Pasek (2022) in their research article they examined the transformation of educational apps from 1997 to till now. Like in 1997, Nokia launched for mobile phone app and next iPhone and iPad introduced in the 2007 and 2011 respective years and there are 80000 educational apps which they do not have any design or implementation to the science like how children will learn and also explained about 6C's- Collaboration, Communication, Content, Critical thinking, Creative innovation and Confidence

J Educ Eval Health (2021) in their research article they explained about four types of Meta verse based upon the augmentation versus simulation and internal versus external. Where augmentation means adding to the existing ones and simulation means provide a unique environment by modelling reality

Four types of the Meta verse

There are mainly four types of Meta verse are there augmented reality, life logging, mirror worlds and virtual reality

Augmented reality:

Augmented reality (AR) is an "interactive experience that combines the real world and computer-generated content". We use this in smart phones and vehicle HUDs

Fig 1 Augmented Reality



**Life logging:**

A life log is a “personal record of one's daily life in a varying amount of detail, for a variety of purposes. The record contains a comprehensive dataset of a human's activities”. The data could be used to increase knowledge about how people live their lives. We use this Facebook and instagram

**Mirror world:**

A mirror world is a “representation of the real world in digital form. It attempts to map real-world structures in a geographically accurate way. Mirror worlds offer a utilitarian software model of real human environments and their workings”. We use this in Google maps

**Virtual reality:**

Virtual reality is a type of the Metaverse that” simulates the inner world”. Virtual reality technology includes sophisticated 3D graphics, avatars, and instant communication tools. It is a world where users feel that they are entirely in a virtual reality. Virtual reality is often described as the other end of the spectrum containing mixed reality and augmented reality. However, virtual reality makes us see a flat image in 3 dimensions based on the working principle of our eyes. We use this in online games

Ashish Agarwal (2022) says how metaverse will useful for skill development where no physical boundaries like in the offline learning,learn by doing as replicating chemistry experiments and running stimulations, Gamifying learning and also multi-dimensional interactions like digital avatars, interactive videos and audios

Daniel Pimenetl and Kai Frazier (2022)concentrated on limitations of the metaverse teaching like accessibility where everyone cannot assess through their mobile phone, affordability which costs more VR headsets to learn, privacy and safety where they collect data of every user which could be possible for data breaching and also it is difficult for assess learning

**III. RESEARCH METHODOLOGY**

This research is descriptive in nature and stratified random sampling technique was adopted and 176 respondents participated in this study. Set of questionnaires was circulated through email and this questions was utilized to collect primary data. The collected data was represented in a tabular format and simple percentage analysis was utilized to represent the data

**IV. DATA ANALYSIS AND INTERPRETATION:**

**Percentage analysis:**Percentage is calculated by taking the frequency in the category divided by the total number of participants and multiplying by 100%

**Table 1 adopting new technologies**

	number	Percentage (out of 176)
Very much interested	100	57
Interested	72	40
Not interested	4	3

From the table 1 we found that 100 out of 176 (57%) students are very much interested in adopting new technologies,72 out of 176(40%)students are interested in interested in adopting and finally only 4 persons does not shown any interested in adopting

**Table 2 technologies most familiar**

Technologies	number	Percentage
Augmented Reality	62	35
Virtual reality	96	54
Extended reality	18	11

From table 2 out of 176 students 62(35%) are familiar with augmented reality,96 students (54%) are familiar with virtual reality and only 11% of the students familiar with extended reality

**Table 3 experience with Metaverse through following**

Experience through	number	percentage
Avatars	82	46
Shopping	16	9
Gaming	52	30
education	26	15

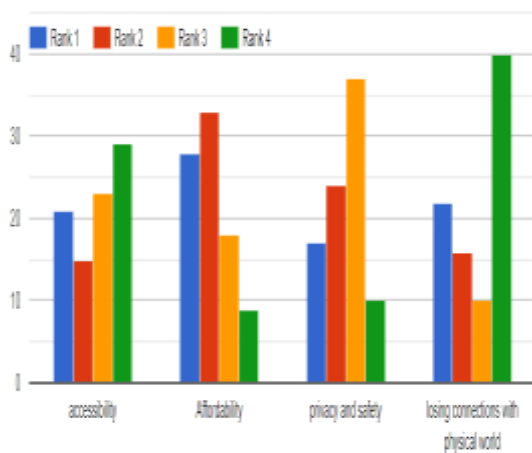
From table 3 we found that out of 176 students 30% known meta verse by gaming,46% known by avatars,15% known by education and remaining(9%) known by shopping

**Table 4 usage of 3D learning**

	number	percentage
Yes, It is useful	166	94
No, not useful	10	6

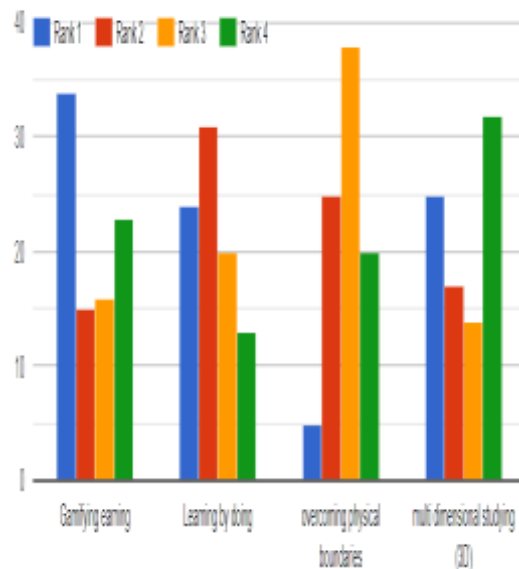
From table 4 we conclude that out of 176 students (94%) majority of the students said it is useful using 3D learning in education

**Fig 2 Limitations of Meta verse**



- 47% of students are neutral and 28% of students are agree for overcoming physical boundaries will happen through meta verse education
- 38% of students are strongly disagree and 28% of students are strongly agree for 3D learning will happen through meta verse education

**Fig 3 Advantages of Meta verse**



**Table 5 Advantages of Meta verse in education**

	Strongly agree	Agree	Neutral	Disagree/strongly disagree
Gamifying learning	68(38%)	30(17%)	32(18%)	46(27%)
Learning by doing	48(25%)	62(35%)	40(22%)	23(18%)
Overcoming physical boundaries	10(5%)	50(28%)	76(43%)	40(24%)
Multi-dimensional studying (3D)	50(28%)	34(19%)	28(15%)	64(38%)

From table we summarize that Out of 176 students

- 38% of students are strongly agree and 27% of students are strongly disagree for gamifying learning will be useful in meta verse education
- 35% of students are agree and 25% of students are strongly agree for learning by doing will be useful in meta verse education

**Table 6 limitations of Meta verse in education**

Limitations	Strongly agree	Agree	Neutral	Disagree/strongly disagree
Accessibility	42(24%)	30(17%)	46(26%)	58(33%)
Affordability	56(32%)	66(37%)	36(20%)	18(11%)
Privacy and security	34(19%)	48(27%)	74(42%)	20(12%)
Loosing connection with physical world	44(25%)	32(18%)	20(11%)	80(46%)

From table we summarize that Out of 176 students

- 33% of students are strongly disagree and 26% are neutral for accessibility will be limitation in metaverse education
- 37% of students are agree and 32% of students are strongly agree for affordability will be limitation in metaverse education
- 42% of students are neutral and 27% of students are agree for privacy and security will be limitation in metaverse education
- 46% of students are strongly disagree and 25% of students are strongly agree for losing connection with physical world will be limitation in metaverse education

## **V. FINDINGS AND RECOMMENDATIONS:**

More than 97% of the students have shown interest in implementing Meta verse in education and out of that already 15% experienced the Meta verse in studies.

And coming to advantages, 38% of the students found that Meta verse can be implemented by gamifying learning and 28% of the students found that Meta verse education can be implemented through multi-dimensional studying.

Coming to the limitations, 48% of the students strongly disagree with losing connection with physical world through Meta verse education and 33% of the students strongly disagree with accessibility issues for Meta verse in education.

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