

Is Learning with virtual technology stimulative or destimulative?

8th International OFEL Conference



Is learning with virtual technology stimulative or destimulative?

Assoc. prof. Marija Dragicevic Curkovic

OFEL
INTERNATIONAL CONFERENCE

17th - 18th April 2020
Dubrovnik, Croatia

Introduction

- According to the statistics, China has planned aim to grow Artificial Intelligence(AI) contribution to GDP to 26% and UK by 10% by 2030.
- Japan has estimated the economic impact of AI application at JPY to be 1.1. trillion by 2045.
- The India's digital learning was valued at \$ 2 billion in 2016 and it is projected to grow at a compound annual growth rate of 30%, reaching \$ 5,7 billion in 2020

Introduction

- In recent years, Augmented Reality (AR), Virtual Reality (VR), Augmented Virtuality (AV), and Mixed Reality (MxR) have become popular immersive reality technologies for knowledge dissemination

The steps:

- (1) establish a contextual relationship between users, virtual content, and learning context,
- (2) allow collaboration between users, and
- (3) enable engagement with the context in the virtual environments and the virtual environment itself (Bekele, Champion, 2019).

Introduction

- One of the challenges faced by VR/AR companies was creating less complex and more affordable hardware-key factor to popularize virtual technologies.
- Latest hardware developed by these companies is classified into three categories :
 - smartphones mounted on headsets,
 - dedicated head mounted displays
 - and augmented reality glasses.

Introduction

- Mobile devices like smartphones have actually processors powerful enough, to make them suitable for VR/AR visualization (Martinez-Gutierrez et al.,2017,p.476).
- For instance, one of the recent HMDs “Microsoft HoloLens,” which is built mainly for an AR/MR experience, can also be used for VR scenarios(<http://www.microsoft.com>).

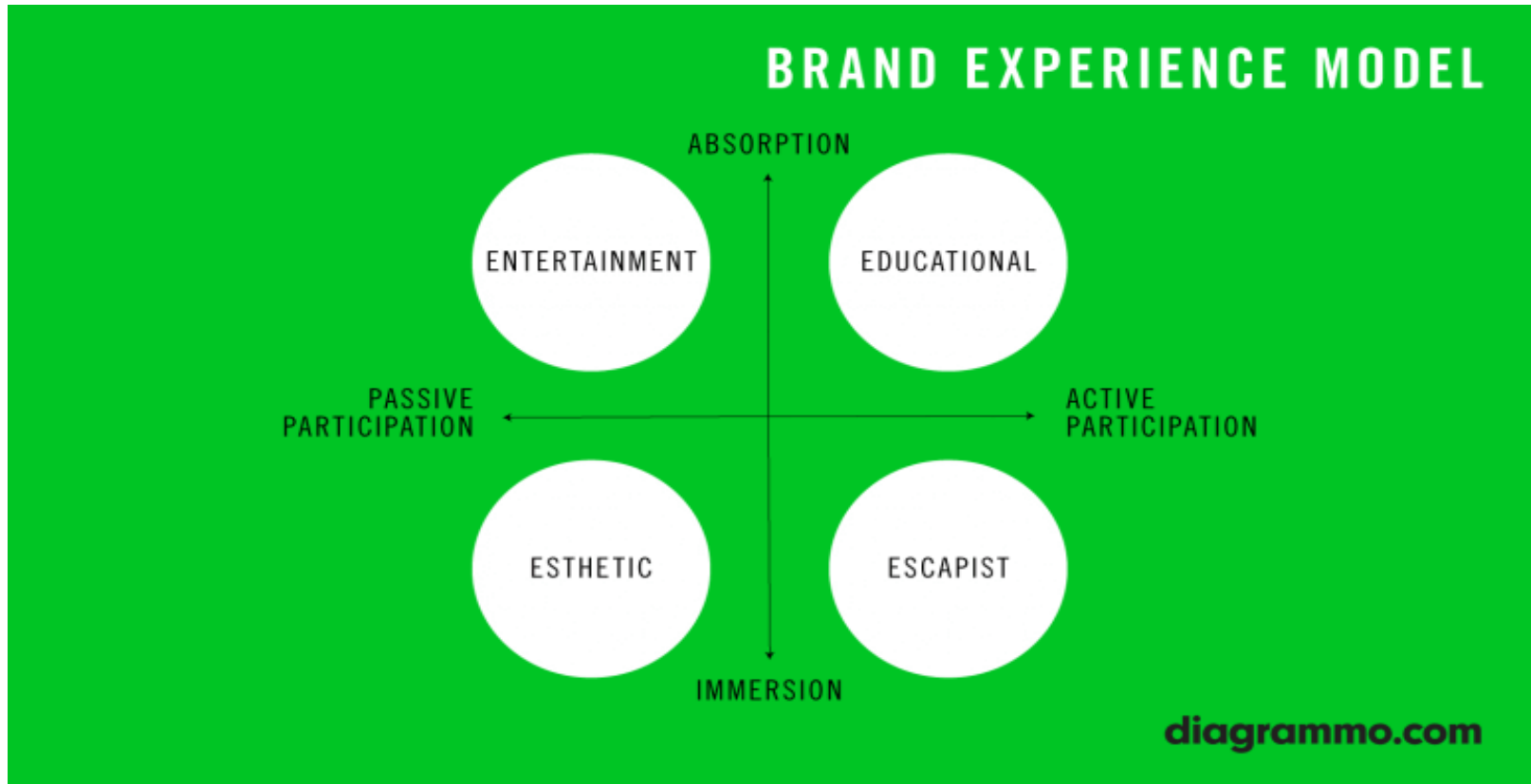
Introduction

- The goal of the paper is to present the results of the primary research-has been carried out at University of Dubrovnik, Department of Economics and Business
- Refers to the students' attitudes towards virtual technology (VR) application in learning process.

Introduction

- H1. The students have positive attitudes towards virtual technology implementation and they prefer learning with elements of entertainment.
- For analyzing data the descriptive statistics has been used.
- For exploring the students' attitudes the Pine & Gilmore model has been used.

Pine & Gilmore model



Pine & Gilmore model

- Elements: Entertainment, Educational, Esthetic, Escapist.
- Entertainment component refers to occupying a persons' attention agreeably.
- Educational component -refers to the consumers' active participation through interactive engagement -of one's mind or body (The consumer absorbs and by doing so increases skills and knowledge)
- Esthetic component refers to the consumers' passive appreciation and does not alter the nature of the environment.
- Escapist element refers to the consumer active participation (is immersed in an actual or virtual environment)

Pine & Gilmore model

- The four experiences vary based on the customer's active or passive participation and on absorption or immersion in the experience.
- Active–passive participation entails the level of customer involvement in creation of the experience.
- The customer can actively participate in a product trial or passively watch a product demonstration performed by a staff member.
- Absorption is “occupying customers” attention by bringing the experience into the mind” and immersion is “becoming physically or virtually a part of experience itself”

The results of the primary research

- The primary research has been carried out in 2020., at University of Dubrovnik, Department of Economics and Business, including Croatian students and student in Erasmus+ mobility program.
- The method of personal interview has been used for exploring students' attitudes towards Virtual technology.
- The sample of 150 students has been chosen.
- The share of 70% of students consider that virtual technologies generally is very important., 10% think VR technology is important and 20% consider it is neither important, nor unimportant.

The results of the primary research

70%-high interest with VR (10% without)

15%-middle (60%-without)

15%-low (25%-without)

The results of the primary research

Importance Technology	Very important	Important	Neither important Nor unimportant	It is not important
2D	25%	60%	10%	5%
3D	12%	68%	20%	-
4D	20%	65%	15%	5%
5D	55%	25%	15%	5%

The results of the primary research

Importance Element	High	Middle	Small	Not at all
Entertainment	70%	30%	-	.
Education	70%	30%	-	.
Esthetic	35%	53%	-	12%
Escapism	42%	58%	-	-

The results of the primary research

Influence on the satisfaction Element	High	Middle	Small	No influence
Entertainment	76%	12%	12%	-
Education	76%	12%	12%	-
Escapism	35%	53%	-	12%
Escapism	63%	20%	12%	5%

The results of the primary research

- According to the students' opinions the main advantages of VR technology
- Education is very interesting,
- There is a possibility to „go through the situations“
- the interaction with the other persons in virtual team,
- to learn without being present in the physical space

The results of the primary research

- Dissadvantages
- the main -costs,
- the level of knowledge and skills
- access to VR
- adaptation of universities

Conclusion

- Students consider that
- 2D technology is important
- Most important 3D.
- 4D and 5D are less important.
- Testing based on 4E given by Pine & Gilmore (1999) -VR is more important in area of education and entertainment

Conclusion

- Virtual technology implementation influence on the satisfaction with learning process
- The influence on satisfaction:
- very important in the area of entertainment, education and escapism; less important in the area of esthetic.

Thank you very much!