



Exploration of the Metaverse in the Business Education Context

Zaheen Rasyiqah Binti Zaharuddin*

Graduate School of Innovation and Technology Management, Yamaguchi University, Ube, Japan.

zaheenrasyiqah@gmail.com*

Abstract. This study aims to examine the impact of interaction with technology, interest, motivation, and netiquette, on students' attitudes towards using the Metaverse in education. The scope of this study are business school students in Malaysia. Data was collected via questionnaire and analyzed using the statistical software, JMP. The results suggest that interaction with technology, interest, motivation, and netiquette, are significantly related to students' attitudes towards the use of the Metaverse in education.

Keywords: Metaverse. Metaverse education. Students' attitudes. Business school.

1 Introduction

The COVID-19 pandemic caused a major shift in the structure of education. Unable to depend on traditional education methods, the world turned to technology to replicate the off-line learning experience in an online world. What started as a temporary fix soon became the new normal. The normalization and popularization of e-learning has changed the educational landscape forever, resulting in education technologies evolving at an exponential rate. One of these technologies being the Metaverse.

The Metaverse made headlines in 2021 when Facebook CEO Mark Zuckerberg, announced the company's rebrand to Meta. With an enormous framework that boasts many digital features of the future [1], this new technology has dominated the business landscape and will soon extend to other fields like healthcare, politics, and education. In the Metaverse, distance is bridged and learning opportunities are available for anyone, anywhere in the world. The potentials of education are endless. This technology serves as the ideal platform that can innovate and transform business education, and take it to new heights.

The Metaverse could potentially be an all-encompassing platform. The utilization of infinite space and data that the Metaverse provides can introduce students to complex and unique experiences that traditional learning methods and 2D-based online learning cannot replicate [2]. This paper intends to deliver new insights to existing knowledge

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Y. Chen et al. (eds.), *Proceedings of the 2023 3rd International Conference on Modern Educational Technology and Social Sciences (ICMETSS 2023)*, Advances in Social Science, Education and Humanities Research 784, https://doi.org/10.2991/978-2-38476-128-9_20

of the Metaverse education by studying business students in Malaysia and their attitude towards the application of the Metaverse in business education.

2 Literature Review

2.1 Metaverse

The Metaverse is a marriage between the physical world and the virtual world, that births a blended ecosystem [3]. Coined from the Greek prefix meta (meaning beyond) and the word universe (meaning world), the Metaverse is an amalgamation of artificial intelligence, virtual reality, and augmented reality. These three components are supported by three features that set the Metaverse apart from conventional VR and AR that we see today; “shared”, “persistent”, and “decentralized” [4].

In order to be considered as a Metaverse, the system must be “shared” with the existence of a society where users are able to interact with one another, through their avatars [4]. The system must also furnish users with a “persistent” world which enables users to live in the Metaverse as they would in the physical world. This means engaging in activities like working, learning, shopping, and entertainment. Furthermore, “decentralized” technologies must be put in place to protect the users’ privacy and security, as well as ensuring that all activities engaged in the system are safely regulated.

2.2 Metaverse in business education

A major criticism of business schools, is the detachment between theory and practice. “Business schools appeal to one another as scholarly communities through a plethora of academic journals that are utterly divorced from the challenge of everyday management” [5]. With the Metaverse taking the business world by storm, it is only logical that future business professionals are exposed to and trained in the Metaverse. Application of the Metaverse in business education can not only help students improve cognitive skills [4], increase productivity and understanding, but also prepare business students for real-world experiences.

With the popularity of the Metaverse, many private entities, non-profit organizations, governments, and scholars are researching and developing Metaverse education. Business schools in France and the United States have joined in these efforts as well.

2.3 Students’ attitudes towards utilization of the Metaverse in education

This rising trend of Metaverse adoption in business schools, signifies the importance of determining business students’ attitudes towards the Metaverse in education. The introduction of any new technology stands to be met by reservations, and the Metaverse is not exempt from this. Several studies have been carried out to determine whether students will accept or refuse the utilization of the Metaverse in education [6, 7]. However, these studies predominantly involve STEM education, and it’s application in business education is still fairly unfamiliar territory.

There are still many unanswered questions when it comes to applying the Metaverse in business education; Will it improve or impair business education? Is it a technology that business students want to explore? How big of a role should the Metaverse play in business education? Further study to better understand business students' expectations and grievances about Metaverse education [8] is pertinent so that responsible parties can create more effective and efficient Metaverse environments in business education.

3 Methodology

3.1 Dimensions

The dimensions of this study were obtained from previous research [9]. The original research proposed eight dimensions. However, only four dimensions were selected, namely, "interaction with technology", "interest", "motivation" and "netiquette", as this research will explore students' attitudes before using the Metaverse, as opposed to the current use of the Metaverse in education. Students' attitudes towards the use of the Metaverse could greatly influence future implementation of this technology in Malaysian business schools, which is why the researcher chose to explore their current impressions before using the Metaverse in education.

The first dimension, "interaction with technology", refers to how students engage with and use technology in their daily lives. This research considers the different ways students interact with technology. For example, via gaming, virtual education, or social networking. The second dimension, "interest" is a term that carries different meanings depending on the context, some of which are curiosity, enjoyment, and motivation [10]. "Interest" is a construct that is reflected by the theoretical perspective of researchers. In this research, the researcher refers to interest in the Metaverse. The next dimension, "motivation" can be defined as "a general concept that includes requests, desires, needs, impulses, and interests" [11]. For this study, the researcher looks at academic motivation as it is a crucial factor that affects the academic success or failure of a student in the process of learning [11]. Expansion of the digital world has brought upon us the creation of the term "netiquette" which is the final dimension in this study. This term originates from the link between the words "internet" and "etiquette" [12]. "Netiquette" is a broad term that encapsulates both moral and ethical values that are exercised online [13].

3.2 Research design

This study is presented in the form of a causal research, where the primary goal is to address the cause and effect relationship between the dimensions and the dependent variable. As shown in Table 1, a total of 1000 respondents, 410 male and 590 female, participated in this study. 440 of them are undergraduate students while 560 are post-graduate students. In terms of age grouping, 390 respondents are between 18 to 24 years old, 320 respondents are 35 years and older, while 290 respondents are between 25 to 34 years old.

The questionnaire was created based on previous literature [9]. The questions comprised of six sections concerning the demographic profile of respondents, interaction with technology, interest, motivation, netiquette, and students' attitude towards the use of the Metaverse in business education. The questionnaires were disseminated by ELK Education Consultants Pvt. Ltd to business students in Malaysia. A pilot study was carried out in February 2023 and adjustments were made accordingly before 1000 questionnaires were distributed from February 2023 to April 2023. The analysis of the data collected from the questionnaires were carried out using the statistical software, JMP.

Table 1. Demographics of the respondents

Variable	Category	f	%
Gender	Male	410	41.0
	Female	590	59.0
Educational level	Undergraduate	440	44.0
	Postgraduate	560	56.0
Age	18 to 24	390	39.0
	25 to 34	290	29.0
	35 and over	320	32.0
Total		1000	100

4 Results and discussion

4.1 Confirmatory factor analysis

The confirmatory factor analysis using the principal axis/varimax method as principal axis method is more suitable for small variables [14]. The validity of the items were determined by looking at the factor loadings. The factor loading shows the correlation between an item and a factor [15]. Factor loadings above the 0.3 threshold expresses a moderate correlation between an item and a factor.

The first dimension, "interaction with technology", comprising of items B1, B2, B3, B4, and B5, all indicated factor loadings between 0.63 to 0.91. "Interest", comprising of items D1, D2, D3, D4, D5, D6, D7, and D8, indicated factor loadings between 0.29 to 0.87. Item D8 had a factor loading of 0.29, was retained due to the proximity of its factor loading to the cutoff of 0.3. Items E1, E2, E3, E4, E5, and E6, which made up the third dimension "motivation", all showed factor loadings between 0.68 to 0.79. The final dimension, "netiquette", consisting of items F1, F2, F3, F4, F5, F6, F7, and F8, had factor loadings between 0.57 to 0.90, all above the 0.3 threshold. The factor loadings of all items in the dimension, shows that the data collected confirms the pre-established theory [9].

4.2 Hypotheses testing

The hypotheses of this study was tested using the results obtained from a Z-test. Using a critical score of 5 percent, the null hypothesis will be rejected if it falls below 1.96. Based on the Z-test, dimensions B, D, E, and F, scored Z-test statistics of 2.44, 2.95,

3.10, and 2.98, respectively. Therefore, there is sufficient evidence to reject the null hypotheses. This results of the hypotheses testing as shown in Table 2, confirms that the four dimensions adapted from prior literature is important when applying the Metaverse in business school education.

Table 2. Summary Table of the Hypotheses Testing

	Hypotheses	Results
H ₁ :	There is a significant relationship between interaction with technology and students' attitudes towards using the Metaverse in education.	H ₁ is accepted
H ₂ :	There is a significant relationship between interest and students' attitudes towards using the Metaverse in education.	H ₂ is accepted
H ₃ :	There is a significant relationship between motivation and students' attitudes towards using the Metaverse in education.	H ₃ is accepted
H ₄ :	There is a significant relationship between netiquette and students' attitudes towards using the Metaverse in education.	H ₄ is accepted

5 Conclusion

The results of this study shows that interaction with technology, interest, motivation, and netiquette are influencers of students' attitudes towards the use of the Metaverse in education. The presence of the Metaverse in education is expected to continue to grow exponentially [2]. It is vital to properly understand students' perspectives on this technology in order to design Metaverse environments that they can benefit from. However, analysis of existing literature indicates that research on Metaverse education is still in its infancy. With this in mind, future researchers are encouraged to carry out similar studies to deliver new insights to Metaverse education in the business education context.

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