

ORIGINAL RESEARCH ARTICLE

Relationship between collection and NFT and metaverses in education

*Karla Karina Ruiz Mendoza, Azucena Yoselin González García**

Universidad Autónoma de Baja California, California 91355, United States. E-mail: gonzalez.azucena@uabc.edu.mx

ABSTRACT

The purpose of this work is to analyze the relationship between the consumption of collective goods and a new digital market. In this case, from the use of blockchain technology (such as cryptocurrency and crypto art) to understanding how education can develop with the rise of digital multiculturalism. Therefore, in the current work, we have analyzed what is the conceptual relationship of collection in history. Now, at the second moment, we have developed the description of cryptocurrency blockchain, and then analyzed NFT. Finally, it reviews metaverse's education and vision and how to use these new digital technologies in order to put forward typical suggestions and reflections in the field of education.

Keywords: digital education; blockchain; cryptocurrency; encryption art; NFT; metaverse; collection

1. Introduction

On October 28, 2021, Facebook founder Mark Zuckerberg launched a project called meta, which integrates Instagram, Facebook, Whatsapp and other products, thus opening an immersive possibility for what we know as metaverse. According to Lorena Fernandez, metaverse can be defined as "a virtual and immersive world parallel to ourselves, but connected with the simulated world". It is also true, but in it, our self is not made up of bones and skin, but of 1 and 0^[1]. Even in order to make this experience more realistic, meta has begun to develop tools such as tactile gloves, which allow users to touch digital objects as if they were real, and even simulate textures, edges, vibrations, etc. The above is only a reference for the progress

of the project, which is already a reality. According to experts at the end of this century, we will spend more time in the metaverse rather than in physical reality^[2].

According to Bloomberg intelligence's recent news estimates, metaverse's market opportunities may reach \$800 billion by 2024^[2]. Even Bank of America points out that metaverse will create a strong economy from work to leisure, while changing traditional industries and markets such as finance and banking, shops and education, health and fitness, and adult entertainment^[2]. It is worth noting that metaverse is not a new project, because it can be traced back to the early 1990s. The innovation lies in how much economic investment has been invested. Therefore, we can point out that this is a transformation of the economic paradigm.

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In these new economic operation modes, we have found blockchain technology and cryptocurrency. At first, these two elements were linked by the emergence of cryptocurrencies such as bitcoin, but recently, this technology has been extended to other fields such as education and science. In this idea, using NFT (non fungible token) and digital collections verified by blockchain (blockchain) seems to be a means to create digital ownership and authenticity certificates for digital content. These digital contents could accumulate to the extent that NFT collections can be created, which will be stored on the server.

Therefore, the purpose of this paper is to analyze the relationship between collectible consumption and the new digital market. In this case, starting from the use of blockchain technology (such as cryptocurrency and crypto art), we can understand how education can develop with the rise of digital multiverse. Therefore, this paper analyzes the conceptual relationship of what is set from the perspective of history and reality, then describes the blockchain with codon, and then analyzes NFT. Finally, it reviews the education and vision of metaverse and how to use these new digital technologies in order to put forward suggestions in the field of education.

2. Collection

From very distant times, human beings began to accumulate different goods, products or elements in order to have them. The understanding of ownership includes the definition in Rae, which aims to “own something”, but in its reflective analysis, it conceptualizes ownership and power, including complex practices aimed at socializing people, that is, establishing relationships with others in social groups through the exercise of power.

The critical analysis of the word “power” can be found in Michel Foucault’s large number of texts on power. According to the author, power is

not surrender or exchange, but exercise. It only exists in behavior, so power is not just something owned by the ruling class; because this is not property, but strategy. In other words, power is essentially something that suppresses others. On the terms of possession and power, we conclude that possession is a kind of power, which depends on the strategy of allowing possession.

Based on the above, we can say that a collection is a form of accumulation by displaying what it has^[3], or in other words, because it shows the functional strategy that leads it to have what it can display now. According to Pinillos, the origin of collectibles reflects the deformation suffered by items when they circulate as part of personal property or cultural heritage in society^[3]. Therefore, it can be said that this is an activity closely related to the nature of human society. In this activity, a form of socialization is allowed, based on the accumulation and display of these items. Historically, it can be said that with the transition from a nomadic society to a sedentary society, the initial accumulation of food followed, but in turn “cherished” other goods. It is the origin of “accumulation society”: the value of objects has exceeded their actual function^[4].

Therefore, almost through circular logic, the behavior of display, display and accumulation also began. In other words, the person who collects but does not display does not end the attribution display cycle. This exhibition can be held in public or private. In the public domain, many public exhibitions are expected to obtain public recognition of its author. Private exhibitions are achieved by displaying collections in private areas, which are accessible only to those selected to enjoy them. In both cases, the collection must be made public in order to perform the function of knowledge flow.

Collection can be understood as a way of knowledge flow, which provides an opportunity to measure this accumulation of collected things. In other words, the act of collecting or owning, in turn,

allows the collection of information (data) from the collected object, which constitutes the whole of knowledge. As the historian Krzysztof said, collection is the product of a special behavior, a system that coexists with human beings in time and space, because sometimes it is collected with an eternal meaning or need. In this case, permanence refers to the collector and his strategic efforts to enable him to obtain the elements in the collection, rather than the value of the latter alone. Therefore, it is a system composed of objects placed together, which connects the knowledge rotating around it, zooming in and out. This is a substance that becomes a symbol^[4] and a meaning.

Collection is a consumption process. In order to make an element in the set become a consumption object, the object must be converted into a symbol^[5], and then “customized” to become a part of the series, etc. It is consumed not in its materiality, but in its differences^[5], and its internal meaning. Braudillard pointed out that consumption is neither a material practice, nor a phenomenology, nor the definition of “richness”. It is not defined by the oral and visual substances of digested food, clothes, cars, images and information, but by all these organizations in signifier; it is a virtual whole of all objects and information. From now on, it forms a coherent discourse. In a sense, consumption is a systematic symbolic manipulation activity^[5].

However, as we know today, consumption originated from the beginning of industrialization and capitalism in the 20th century. As an economic model, because it is from this moment that the number of mass-produced goods surged, so anyone can become a collector^[4]. Because of this redundant universality of collections, its value is measured according to its originality and particularity. Therefore, unpublished and unique things are more valuable than things with multiple copies. On the other hand, over time, these collections have also concentrated their value because of their size, their rarity or divinity, their aesthetics, their practical use in science, etc. This

means that in modern times, any item can be the subject of a collection.

Walter Benjamin’s article on collections and the image of collectors points out that when collecting, the most important thing is to liberate items from their original functions in order to establish the closest relationship with others. This relationship is the opposite of utility and is classified into complex and strange categories. What is this “done”? This is a great attempt to overcome the complete irrationality of its existence by integrating a specially created new historical system collection^[6].

From the above explanation, objects are deprived of all practical features and are given the only function of memory to explain the passage of time through memory. Therefore, Braudillard believes that the purpose of the collection is to replace religion and enable people to respond to the pain of time and death^[5]. In this sense, Benjamin suggested that as a reader, in addition to books, he also collected quotations and objects of reflection. Like every collector, he compiled a moderate catalogue. A space in which collections are systematized for display, whose organization proves the significance of realizing its strategy and its power again. This general collection demand has penetrated the real object. Now we can understand how Internet users begin to collect: digital files such as songs, images, photos, text, pdf books and so on. Therefore, we think it is necessary to understand how NFT further utilizes this collection concept and brings it to the edge of capitalism.

3. Blockchain technology and cryptocurrency

We now know that bitcoin can buy any product or any physical product online, so the store that buys the item must allow payment in this currency, but what is bitcoin? Scholz defined it as a digital currency operated through blockchain technology^[7]. In addition, bitcoin is not only a

digital currency, but now there are more than 8400 cryptocurrencies^[8] as choices in the market. If you want to know the cryptocurrency we are talking about, please visit the Common market website.

In the present and future, cryptocurrency has not changed people's views on the value of goods and how to obtain goods and services; because the blockchain can achieve its goal without supervising the market, that is, the central bank supervises the monetary value system, but the transaction basis is the US dollar price, on the premise that the value of each currency can be increased or decreased according to the market demand.

Therefore, in some countries, the technology is used to improve the quality of life at the community level, "Brazil and Colombia are the countries that accept and use the currency most in Latin America"^[9]. In this regard, Hurtado explained that the neoclassical model refers to any internally accepted means of exchange, so there are some basic aspects to consider in terms of money^[10]. First, it must perform the function of exchange, that is, it must carry out discrete exchange based on "double matching of needs and seeking self-sufficiency". Second, it must be a valuable deposit, that is, it must try to keep pace with the times. Let us remember that we used to use gold as a measure of value, or oil; as a third point, it must be an accounting unit that allows transactions to be recorded from the account book; finally, Hurtado pointed out that it must be used as a deferred payment model, and the currency must be portable, acceptable and difficult to forge.

Therefore, the analysis we must draw is that money is generated as a trust and stable choice, because although there are exchange methods, it is often impossible to deliver or exchange, because many of them are based on possible things, such as: I give you three eggs of my hen, but once you have beans, you will return a kilogram of beans to me. In this regard, there may be epidemics or situations in which goods or food have been damaged,

leading to conflict and violence. Therefore, we can emphasize a basic element of money use: The immediacy and reliability of transactions. But how did blockchain technology come into being and what is its significance? Although there are banks and their supervision, Nakamoto Sato published a document in 2008, introducing the problems and solutions of exchanging goods and services through the network. In introducing his paper, Mr. Nakamoto suggested as followings^[11].

In the process of electronic payment, Internet transactions almost completely rely on financial institutions as a trusted third party. Although the system works well in most transactions, it has the inherent weakness of trust-based model. Completely irreversible transactions are impossible because financial institutions cannot avoid mediating disputes. The cost of such mediation increases the transaction cost, limits its minimum available scale, eliminates the possibility of occasional small transactions, and is higher due to the loss of the possibility of irreversible transactions for irreversible services. With the reversal of possibility, the demand for trust is increasing. Traders should treat customers with caution and ask them to provide more information than others. A certain percentage of fraud is considered inevitable. When physical currency is used in person, these costs and payment uncertainties can be avoided, but there is no mechanism to allow payment through communication channels without the participation of a trusted third party^[11].

Therefore, the problem of localization is the trust and security of the process, plus the cost of using a third party to pay these fees. In other words, if you need to shop in any store on the Internet, you will usually use a third party to process the payment, which makes the payment order as follows: the payment is made from your bank, your bank communicates with the seller's Bank, whether the payment is accepted or rejected. If you accept, you will get your money, and if you don't accept, you will refuse to pay. This process may be

fast and smooth, but technically, we have also paid the price of means; indirectly, through our bank or the same institution where we pay, you must pass different verifiers to verify.

What Nakamoto has done is to propose “an electronic payment system based on password proof rather than trust, which allows two stakeholders to trade directly with each other without the need for a trusted third party”^[11]. This response is based on Cypherpunks’ solution on digital media privacy in the 1990s^[12]. What we should pay attention to is to improve our understanding of the use of algorithms and how to adjust our content, to improve our thinking and learning accuracy.

A potential problem in the digital age is the use, theft and data manipulation of social media. Bradshaw and Howar of Oxford University conducted a study called “global rumor order”^[13]. They emphasized the use of computing publicity as a strategic control tool, which is combined with monitoring and censorship. In this study, they found three uses for computing advocacy: (1) abolish fundamental human rights; (2) slander the political opposition; (3) quell political differences. In this sense, when we mention the security and reliability of blockchain process, we always start from its emergence (worthy of redundancy), that is to say, from the way it was born: The so-called

Cryptopunk’s attention to information dissemination and distribution.

So how does it work? Blockchain is a database that works by exchanging information with many users, that is, through the so-called peer-to-peer network^[14]. Blockchain technology has changed the working mode and relationship with users because it uses a distributed information network. For example, for banks, centralized and decentralized networks are often used to better understand this, as shown in **Figure 1**.

For this distributed network to work, the following seven elements must be considered^[15]: node, miner, hash, nonce, block, labor and wallet (or wallet). For example, in automobile currency exchange, the first thing to do is to enter the transaction to be carried out in a comment (block). For the automobile with serial number “X”, the miner or node confirms that user “A” has enough money to buy, and exchanges through relevant comments. In this process, hash and none are created. The advantage of this is that if “A” users want to sell their vehicles in the future, they can easily search when, how long and how the program is carried out without any problem, and only carry out the same program on the correct register. This process is related to a hash tree or Merkle tree, where the responses of all blocks are cascaded.

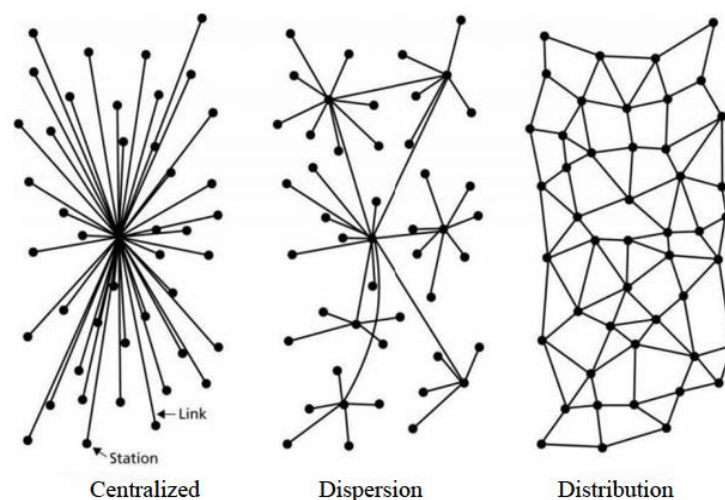


Figure 1. Original plan attributed to P. Baran (1964).

Source: According to Paul balan’s chart, these three network topologies.

Finally, at this point, we can say that blockchain can go beyond cryptocurrency. The first example may be to help verify attributes or objects, whether in cars, houses or in school environment. It may help to preserve students' journey in their academic background. Although the first tweet Jack Dorsey sold in May 2014 was the beginning of the so-called non fungible token (NFT), which began to sell art, or also known as crypt art.

NFT is a variant of cryptocurrency, so it works through blockchain technology. NFT is non expendable and can be expressed as a small contract (smart contract), which cannot be exchanged or repeated. In order to make the process effective, an address is needed to send the contract, and finally data coding. This digital currency is different from cryptocurrency. Cryptocurrency increases in value with the increase of demand, and vice versa. It has a unique value, which creates a new digital business model: cryptocurrency. But what is a password? Well, this is a way to sell invoices or birth certificates for your creations; call yourself digital painting, digital art, twitter, article, or any digital object you want to sell or provide value.

Initially, data protection and intellectual property rights can be considered, but the need to collect and obtain satisfaction in acquiring these digital items has become a forward-looking business. These collectable contracts can be programmed from Ethereum (<https://ethereum.org/en/>), an open source platform, where NFT and other encryption engines are born and maintained; it basically uses blockchain Technology.

Now, these NFTs are sold in the digital active market, of which the most famous and commonly used is open sea, which was born in 2018, is described as the first digital website or digital market for encrypting alternative and non replaceable tokens. Digital elements for sale include: music, art, Internet domain name, collectible card, virtual world, sports card or card, etc. Therefore, large companies will be looking for card collectors, generation X and millennium bug are an important goal. Then,

according to the theme of the collection, the purpose is to obtain these digital items and resell them in the future if feasible.

Owning NFT is not only a market approach, but also a way to express status and power. In addition, let's say that NFT is like a work of art, where we may buy something from a valuable writer, an upcoming writer, or someone who will never be recognized for his work; it's like throwing a coin into the air. In this sense, the creation of these cryptocurrencies has become an irony, because although the initial words were to build confidence in process and stability, it has become completely speculative.

However, this type of transaction brings other problems. The first is the damage to the environment, because the confirmation process of NFT is often very slow, which leads to the extensive use of computers, that is, those users who connect to Ethereum to approve the contract and give the process: casting, selling and exchange. Another problem is the so-called price of natural gas, especially when many NFT, so metadata; that is, when we create NFT, we must pay for it, which may range from \$60 to \$100 per transaction.

Although there is no doubt that the most complex controversy is the impact on the environment, because according to digital ethics magazine, "bitcoin trading accounts for 0.2% of global power consumption"^[16], because "according to the estimation of tum and MIT scholars, the use of bitcoin generates 22.9 million tons of carbon footprint per year"^[16].

4. Education and metaverse

There is no doubt that blockchain technology will far exceed people's interests, especially in accumulating or projecting hierarchical relationships; in any case, this is a power relationship. Walter Benjamin talked about the time relationship between collectors and collectors: "A collector is a man of time"^[6]. In this regard, we can use these analogies to understand the importance of analyzing and questioning these human uses in technology and

digitization.

However, when introducing his project “meta”, mark Zuckerberg asked us to rethink how humans interact with space and how to manage the environment; or not a direct answer. This project reminds us of online video games that have been on the market for more than ten years; like “Sims 4”, where you can interact with other characters, whether digital characters or your own friends. On the other hand, many people recall Stephenson’s science fiction in 1992, or Bennett or rob Lockes have come close to the concept put forward by Zuckerberg. Considering 1992, the novel avalanche can be regarded as the first novel with the words “metaverse” and “Avatar”^[17].

This is important because blockchain technology is a way to interact with other participants, which makes it dangerous to use these suggestions in an area where digital products can be exchanged for real money or bitcoin. In addition, although this idea does not seem to have been reviewed in the field of education, we have found some interesting suggestions, such as a proposal published in Israel v. Marquez in 2011, which uses the second life platform as an educational platform; this video game is free, where you can create your own avatar, give you the functions you need, and obtain objects or items to continue your digital life; shoot real.

Some of the benefits found in Marquez’s research are: it allows students to gather in different places; incorporate learning contents in various forms; maintain a sustainable development environment; the content is provided in three-dimensional format, which improves the process of knowledge acquisition; learn, create and explore 3D models; students are the protagonists; learning is a game.

In view of the disadvantages of using second life, the following problems are found: technical problems; when things fail, such as in material life, there is no backup; interaction is not so direct; limited body language; some students have little

technical knowledge^[17]. However, if we understand Zuckerberg’s point of view, we will understand that he is looking for a simple user experience in which virtual reality lens can be used to eliminate the above problems. Of course, this can be understood under appropriate conditions so that we can apply it to countries with lack of Internet connection or serious public failure, but much remains to be done.

On the other hand, in the study of Anacona, Millan and Gomez^[18] “The application of metaverse and virtual reality in teaching”, it can be concluded that the use of unity (virtual reality) platform provides a variety of designs, which illustrate creative methods, such as building a virtual house with limited materials, or being able to observe the human body in a virtual way to understand its parts. In this sense, “one of the ways these tools are used is to learn while playing”^[18], but we must also try to download these tools to public institutions; even in private schools without such information and technology training.

5. Conclusions

In the contemporary digital age, people are increasingly seeing the interest and intention of enterprises in digital proposals and platforms, in which places and physical interactions are replaced by experiences beyond our tangible reality. However, from the long-term negative impact, ignorance of what digitization and indifference to the environment mean is only a sign that technology is misunderstood. In other words, becoming a digital citizen is not to replace the tangible reality and turn to digital space, but to make it a means to solve daily problems. It is also our responsibility as digital citizens to be aware of the damage that digitization may cause to our humanity, that is, those who can use the Internet skillfully, critically and safely on a regular basis^[19]. However, we recognize that these suggestions are made in construction and are equally interesting because they are based on the unique evolutionary needs and hierarchical trends of human collectors.

For example, one of the new proposals is to

include metaverse. Some problems that education metaverse may face are monetization and the acquisition of digital products, especially the relationship between these technologies and the environment. We should not forget that technology is a tool and an ally to better understand our surrounding environment. Our thinking is to improve the conditions of our learning and teaching, not to replace the life of education. Although there are now digital citizens, we are very clear that we will now have citizens of the digital meta-universe.

Finally, there are some suggestions as following:

Combine digital education and virtual reality technology into classroom teaching as much as possible; one approach could be 3D Google, which works with the use of mobile phones.

Analyze the advantages and disadvantages of using NFT in education, because we can use NFT to create rewards, or tell them how these technologies work to understand the progress of digital technology.

Analyze how to link meta poetry, metadata and students' curriculum development. If an educational meta poetry is possible, we can propose different teaching forms, which will be a complex problem to solve, rather than become a virtual educational hegemony.

Conflict of interest

The authors declare no conflict of interest.

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