İkinci Yaşamın Ötesinde Yerleşikler Olarak Metakütüphaneciler: Çelişkili Bir Kavram Olan "*Metaverse*" Üzerine Genel Bir Bakış

Metalibrarians as Residents Beyond the Second Life: An Overview of Contradictory Concept on "The Metaverse"

Mustafa SAĞSAN

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Öz

Bu makalenin amacı, metaverse'in kütüphaneler ve kütüphaneciler açısından rolünü anlamaktır. Sanal gerçeklik, artırılmış gerçeklik, ikinci yaşam, metaverse, metamodernizm, metaokuryazarlık ve metakütüphaneci gibi yeni kavramlar, gerçek dünya kütüphaneleri ve kütüphanecileri bağlamında tartışılmıştır. Makale kütüphaneler ve kütüphanecilerle bağlantılı dört bölüme ayrılmıştır. İlk bölüm sanal gerçeklik (VR) ve arttırılmış gerçeklik (AR) teknolojileriyle başlamakta ve kütüphanenin ve kütüphanecilerin önemli rollerinin altını çizmektedir. İkinci bölüm metaversenin öncüsü olan Second Life (SL) ile devam etmekte ve kütüphanecilerin ve kütüphanelerin önemine dikkat çekmekedir. Dördüncü ve son bölümde, dijital çağda yeni ve çelişkili bir kavram olan metaevrene odaklanılmakta ve hem kütüphanelere hem de kütüphanecilere "metakütüphaneci" olarak adlandırılacak yeni roller ve görevler sunularak metaevren çağındaki metamodernizm tartışılmaktadır. Çalışmada, metamodern çağda metakütüphanecilerin rolünü; eğitimcilerden, iletişimcilerden, tasarımcılardan ve bunun gibi diğer hedef gruplarından farklı olarak konumlandırmak için sistematik bir literatür taraması kullanılmıştır. Mevcut literatürün bize gösterdiği gibi metakütüphanecilerin omuzlarında hem metakütüphane kullanıcıları için müfredat tasarlamak hem de bilgi kaynaklarını yönetmek için ağır görevler bulunmaktadır. Araştırma; metakütüphanecilerin, metaverse ortamını benimsemek adına ne gibi yeni roller, görevler, sorumluluklar ve yetkinlikler üstlendiğini önererek tamamlanmıştır.

Anahtar sözcükler: *Metakütüphaneci, metaverse, artırılmış gerçeklik, sanal gerçeklik, ikinci hayat, meta okuryazarlık, metamodernizm.*

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Abstract

The purpose of this paper is to understand the role of metaverse in libraries and librarians. The new conceptions; such as virtual reality, augmented reality, second life, metaverse, metamodernism, metaliteracy, and metalibrarian, have been discussed in the context of real-world libraries and librarians in the article. The organization of the article has been divided into four sections, which are interconnected with libraries and librarians. The first section starts with virtual reality (VR) and augmented reality (AR) technologies and underlines the important roles of the library and librarians. The second section continues the Second Life (SL), which is the pre-period of metaverse, and points out the importance of librarians and libraries. Finally, the fourth and last section focuses on the metaverse, as it is a new contradictory concept in the digital age, and discusses the metamodernism within the metaverse age by providing new roles and tasks for both libraries and librarians, which will be called "metalibrarian" thereafter. A systematic literature review has been used to position the role of metalibrarians among the other target groups such as educators, communicators, designers, et al. at the metamodernism age. As the existing literature indicates that metalibrarians have heavy duties on their shoulders to both design curricula for the metalibrary users, and manage information resources. Research has been proposed on the new roles, tasks, responsibilities, and competencies for metalibrarians to embrace the metaverse environment.

***Keywords:** Metalibrarian, metaverse, augmented reality, virtual reality, second life, metaliteracy, metamodernism.*

Introduction

The concept of a Metaverse, which could be defined as a virtual ecosystem, is still under debate because of its unclear understanding or utopic idea, perceived by scholars. Although the concept has gained significant attention in recent years, it is still a black box for some reasons. For example, there is a lack of correct understanding of its exact definition as well as identifying the true discipline(s) or background theories. Although Metaverse derives from the online gaming idea of the virtual environment, it underlines the importance of the various types of virtual interaction games. Therefore, what makes it popular and how much it is fashionable among researchers nowadays are still investigating. Education, nursing, health care, business, communication, arts, engineering, architecture, and marketing campaigns are some of the major areas where Metaverse technologies are most frequently used.

The Metaverse word was used first by Neal Stephenson (1992) in his novel Snow Crash is a combined word, "Meta" means beyond, and "verse" means universe in Greek. The Metaverse is not just a theoretical idea; it is fast taking on a material form. The Metaverse does not simply combine the virtual and real worlds; it refers to an ecosystem that integrates and overlays the virtual world with actual environments, social lives, and identities involved in Augmented Reality (AR), Virtual Reality (VR), Cloud Computing (CC), the Internet of Things (IoT) and Blockchain, which aims to create an immersive experience for the users (Qiu et al., 2023; Tlili et al., 2022).

The main purpose of the study is to understand the "contradictory concept" of Metaverse with its related thoughts and identify how it could be integrated with library science and librarians. Furthermore, this paper also tries to determine the clues and propositions derived from the Metaverse understood which contributes to the library services and librarians as new job descriptions as well as categorize librarians' role and library services, which play pioneer roles in Metaverse environments. Therefore, a new contradictory concept, called "Metalibrarian", will be reviewed based on the interrelated literature.

As the concept increasingly plays a crucial role in the virtual environment and includes a variety of information resources, libraries, and librarians have gained a competitive advantage in their professional skills and occupational competencies. For those reasons, librarians should have huge duties on their shoulders to create distinctive strategies by using this term. Even though libraries are inability to use advanced technologies in the digital age, Metaverse-related technologies might be an encouraging environment for the librarians to adopt the new advancement. Therefore, Metaverse is an alternative library service that can reach broader audiences and provide access to resources and consultation services (Anna, Haristany, and Ismail, 2023, p. 1). However, existing research in the Turkish literature lacks investigating Metaverse-

related technologies inside the libraries and further research is needed for specific purpose on the literature. Hence, this study aims to review the literature on Metaverse related to libraries and librarians for adopting the new technological advancements.

The organization of the article has been divided into four sections, which are interconnected with libraries and librarians. The first section starts with VR and AR technologies and underlines the important roles of the library and librarians. The second section continues the Second Life (SL), which is the pre-period of Metaverse, and points out the importance of librarians and libraries. Finally, the fourth and last section focuses on the Metaverse, as it is a new contradictory concept in the digital age, and discusses the Metamodernism within the Metaverse age by providing new roles and tasks for both libraries and librarians, which will be called "Metalibrarian" thereafter.

Library/Librarian Context within Virtual Reality (VR) and Augmented Reality (AR) Technologies

VR is one of the most important parts of the Metaverse-related technologies that relies on extensive historical background. The virtual environment requires simulation, high-quality content, and communities. Virtual world content, which is based on VR technology, includes immersive learning environments, exhibits, discussions, conferences and workshops, professional networking, and numerous types of library programs (Hill, Vans, and Dunavant-Jones, 2017). VR technology could enhance library programs and services, such as virtual reference services, virtual tours of library spaces, and virtual learning environments (Pu and Chai, 2021a, and 2021b). In addition to this, the potential applications of VR technology for library programs and services are vast and can transform the way libraries engage with their users (Tella, Ajani, and Ailaku, 2023, p. 14). VR technologies stimulated to form of virtual libraries, which were popular during 1995s.

VR is a completely artificial digital environment that uses computer hardware and software to create the appearance of a real environment for the users. For a user to enter a Virtual Reality environment they must first put on special gloves, earphones, and goggles, all of which receive their input from the computer system. By doing this, at least three of the five senses are controlled by a computer. VR is the complete immersion into a digital world either based on a real model or completely fabricated. AR is the blending of digital information within a real-world environment. The similarities between the two are that they both use various sources of information and programming to create visual, or other sensory, simulations to create an experience. Despite the similarities in feel to the user, there are more differences between AR and VR than there are similarities, with the biggest difference being that one takes place in the real world and the other does not (Kipper and Rampolla, 2013, p. 21-22).

Virtual libraries offer a chance to provide services to users who might have physical limitations or geographic constraints that prevent them from accessing traditional libraries. By implication, this is why virtual world libraries blend traditional library functions with the immersive capabilities of VR and other digital environments (Alexander and Chiang, 2022). Immersive technologies enable a virtual library to deliver its users within a wider environment. More opportunities and a variety of library services have been gained in those years.

Virtual world libraries represent an innovative fusion of traditional library services and immersive digital environments, providing users with unique opportunities for accessing information and engaging with digital resources (Oladokun, Yahaya, and Enakrire, 2023, p. 19). These libraries often simulate physical library settings, complete with bookshelves, reading areas, and interactive exhibits, while offering features unique to virtual environments, such as 3D exploration, avatars, and real-time communication (Tella et al., 2023). This way, traditional and virtual library services are integrated successfully.

To understand the differences between VR and AR should be conceptualized in detail. AR is any use of technology that adds a new layer of virtual information to existing physical reality. Virtual reality creates completely new worlds, which are digital, while augmented reality transforms how we interact with the real world. It creates the experience of seeing or riding in, an airplane, rather than transforming an existing airplane.

AR improves librarians' activity by helping the management of library resources, aiding resource search, information literacy, location-based services, interactive networks, and researching and visiting historical sources (Alikhani et al., 2018). AR is a medium in which information is added, changed, and modified to the physical world in registration with the world. GPS mapping systems and mobile phone applications are two important technologies and media that are commonly used by AR.

AR hardware consists of sensors, processors, displays, and AR systems and software is a bit harder to explain than hardware. Major software components for AR systems are divided into four categories.

1) Software involved directly in the AR application

2) Software used to create AR application

3) Software used to create the content for the AR application and

4) Other software related to AR (Craig, 2013).

To conceptualize the software components for an AR system, we can use low-level programming libraries, rendering and application-building libraries, plug-in software for existing applications, standalone applications, and content applications. An AR application should have a computer program that includes six important components: content, interaction, technology, the physical world, and participants (Craig, 2013). Briefly, AR triggers to set up a virtual library by using immersive technology in the Metaverse. Online circulation, real-time library cataloging, and on-demand reference services can be moved to Metaverse through these technologies.

Azuma (1997) asserts that three characteristics define AR. It combines real and virtual worlds, integrates interactive in real-time, and registers in 3D. For example, the physical world is augmented by digital information that is superimposed on a view of the physical world. Moreover, the information displayed in registration with the physical world as well as displayed is dependent on the geographic location of the real world and the physical perspective of the person in the physical world (Craig, 2013). Interlibrary loans can be strengthened based on the displayed geographic location from the library service perspective and librarians will be free to serve continued services to the library users.

Libraries exist at the intersection of physical space, technology, and information. To better serve their users, libraries can consider incorporating augmented reality as part of their mixed-reality offerings. Augmented reality presents a challenge to users in terms of understanding and utilizing the technology. Libraries can help users overcome this challenge by offering classes and access to more advanced devices. Additionally, libraries can form partnerships to facilitate the design of innovative experiences (Fernandez, 2017).

There are some advantages and disadvantages of using AR in libraries. It enriches the library services as well as optimizes library technical affairs. AR increases technology security and library activities. Also, facilitates the creativity of librarians as entrepreneurs. The disadvantages side of using AR in libraries are categorized into four challenges: technical, economic, cultural, trained people, and organizational processes (Saleh et al., 2021, p. 6-7). Economic disadvantage is the major obstacle, especially the libraries that are located in developing countries because of limited resource allocation from the government budget.

Librarians/Library in the Second Life (SL)

The advancements in VR and AR technology are encouraging the creation of a second life in the Metaverse. Experience a second life like never before with the advancements in VR and AR technology. The possibilities are endless in the Metaverse, where it could be explored, connected, and created in ways never imagined before. Second Life

(SL) is a virtual world platform where individuals need to design their life-saving, like emergency rescue scenarios based on role-play gaming in simulation. A library can build a virtual world through the second-life application. Librarians can create an avatar, give information literacy services, education, consultation, book clubs, community, author talks, book discussions, author talks, art exhibits, seminars, workshops, and more (Anna, Haristany, Ismail, 2023).

SL could be defined as a free online virtual world imagined and created by its Residents" (Linden Lab, 2009; Linden Lab, n.d.). SL users can be called "residents". They create virtual representations of themselves, called avatars, and can interact with places, objects, and other avatars. Avatars can explore the world (known as the grid), meet other residents, socialize, participate in both individual and group activities, and build, create, shop, and trade virtual property and services with one another (Terry and Keeney, 2022). An avatar is a personalized representation of a self-used for interacting in virtual environments or video games.

Librarians have been observed to exhibit a clear reluctance when it comes to expressing their desire to build digital platforms in the virtual world of SL. This hesitation can be attributed to several factors such as the lack of reliability of SL, the limitations of its search engine, the restrictions on accommodating a large number of users in one place, and the challenges of integrating the internet and other media into SL. These issues have made librarians wary of moving their library services to SL. Furthermore, librarians are also concerned about several other aspects such as the scope of activities that can be performed on SL, the availability of suitable locations, the need for cooperation among various stakeholders, the visibility of library services on SL, opportunities for professional development, and the prospects of wider adoption due to technological limitations.

A study conducted by Elliott and Probets (2011) highlights that these factors have contributed to the unwillingness of librarians to move their services to SL. The study also discusses the need for further research to address these issues and to identify ways to overcome the barriers to the adoption of digital platforms on SL. Librarians can have an opportunity to collaborate within the SL platform as well as to reach out to the global community from the user perspective. In addition, face-to-face personal connection could be held among the avatars in SL. They also can catch a chance to be more creative by using Machinima (Sitearm, 2021) which are videos created within virtual worlds by avatars, with other avatars as actors, and Chatbots that represent new technology being developed to offer responses to basic reference questions, and the ability to contextualize the question and the questioner utilizing various environmental cues. "Librarians also have opportunities to extend their reach by helping people learn how to learn and to turn potential users into critical thinking, knowledgeable, effective information "detectives" (Grassian and Trueman, 2007, p. 87).

Most librarians and educators begin learning about the virtual world in SL. They realize that SL is not the only virtual world and have begun exploring educational simulations in communities in other virtual worlds like Kitely, Inworldz, and Opensim. Thus, VR, AR, and SL are taking place within the Metamodernist world, which includes bionics, nanotechnology, machine learning systems, IoT, and so forth.

There are also free apps, including VR and AR technologies, that could be downloaded by the students, called Aurasma (www.aurasma.com), EON reality (2015) and Layar (2015), Massis, (2015), and Valibrarian (2015). By using those apps, SL librarians have some responsibilities such as designing virtual library space, performing maintenance of the virtual library, teaching/lecturing in or about your virtual library, monitoring the virtual library reference desk, participating in or planning student activities, participating in or planning faculty activities, participating/planning librarian-to-librarian activities, virtual world training for personal improvement (Blankenship and Hollingsworth, 2009, p. 437). Therefore, SL librarians are another label for the Metalibrarians which takes an important place among their tasks and responsibilities. SL is a platform that enables the creation of virtual libraries. AR and VR are two important technologies that help us understand the future of libraries in the Metamodern age. The digital age alone is not enough to describe the new concepts, applications, and technologies. Therefore, we use the term Metamodernism to refer to this new age, which encompasses VR, AR, SL, Metaliteracy, and Metaverse.

Metamodernism

Metamodernism is a term that refers to the philosophical moment in time and expresses ourselves in the cultural era. While modernism is characterized by an oscillation between modern commitment and postmodern detachment, Metamodernism should be situated epistemologically with (post) modernism, ontologically between (post) modernism, and historically beyond (post) modernism. Post-postmodernism, digimodernism, or automodernism are some of the cumbersome terms which are used instead of Metamodernism. In addition, Metaxis is used for Metamodern perspectives which underlines the cultural value conflicts (Vermeulen and Akker, 2010).

The modern and the postmodern being associated with Hegel's "positive" idealism, Metamodernism inherits Kant's "negative" idealism, which can be referred to as an "as if" judgment (Nelli and Mykhailo, 2022, p. 31-32). The discourse of Metamodernism consciously entrusts itself to the impossible opportunity–modern naivety has inspired it, whereas the skepticism of the postmodern has enlightened it (Vermeulen and Akker, 2010, p. 32).

Nelli and Mykhalio (2022, p. 34) summarize four important features of Metamodernism: first, binary logic that reveals itself in oscillation between modernist enthusiasm and

postmodernist irony; second, it is a naivety that can be found in advocating the right to spontaneity and inconsistency; third, purposeful incompleteness of thoughts and deeds; four, rejection of the search of aesthetic absoluteness typical of the logic of the modern with preference being made towards the research of the shift within artistic boundaries and expansion of the boundaries of cognition as a whole.
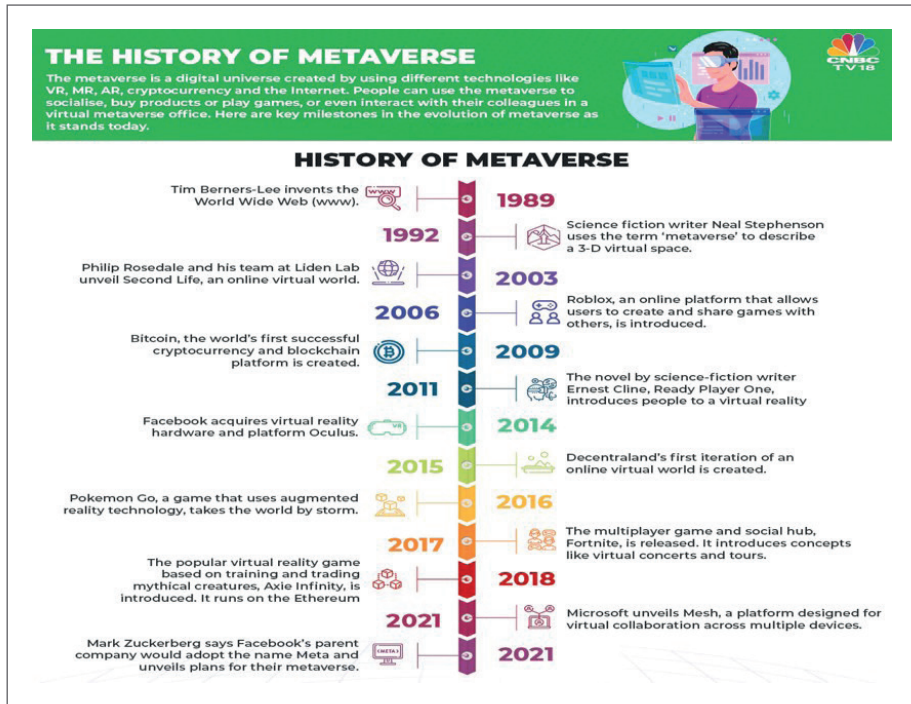
The ontological dimension of Metamodernism is metaxis, which is defined as tragically entrapped between the world of the gods and humans. On the other hand, the epistemological dimension of Metamodernism refers to the search for usable knowledge and truth as well as the relation between subject-object metaphysic of modernism, addressed by communal or cultural context (Pipere and Martinsone, 2022, p. 9). The axiological dimension of Metamodernism can be described as the interaction of the values of the researcher and the oscillation between these values in different contexts and stages of research. Therefore, it encourages discussions and solutions related to the diversity of values, coordination of interests of scientists and community, and attempts to endorse multidimensional reality (Pipere and Martinsone, 2022, p. 14).

Metamodernism encompasses both a cultural evolution phase and a developmental stage of society, which is characterized by the integration of modernist structural conformity and postmodernist self-invention (Gardner, 2016, p. 86). Therefore, the understanding of Metamodernism as a whole is based on the premises of both modernism and postmodernism. Transdisciplinary and interdisciplinary approaches evaluate the importance of self-consciousness and radical relativism in addition to the two types of modernism. The critical question at hand is to recognize the role of librarians and libraries in the Metamodern world, which is referred to as the Metaverse.

Metaverse and the Role of Librarian/Library

Metaverse is an interactive environment, which enables residents to create and share synchronous digital communication. The Metaverse is a term used for a virtual world, first described in Neal Stephenson's science fiction novel Snow Crash in 1992. Metaverse is an immersive, 3D, virtual world where users, regardless of their location, engage in any social and economic interactions. Metaverse-related technologies are widely used by urban libraries such as VR, AR, 3D technology, RFID, AI, and IoT (Guo et al, 2023).

Figure 1

History of Metaverse

Source: Sarkar (2022)

As can be seen from the above Figure-1, the history of Metaverse started in 1989 with the WWW concept. The year 1992 addressed describing the 3-D virtual space. Second Life, which was born Linden Lab, occurred in 2003. Internet technologies penetrated the financial and online gaming sectors in 2006 and 2009. VR entered to science fiction world in 2011 and social media users were introduced to Facebook in 2014 and 2015. 2016 and 2017 are the years of augmented reality, which allows players to have multiplayer games. AR and VR technologies were integrated to create mythical creatures in 2018 as well and Microsoft, which was also triggered by Mark Zuckerberg eventually in 2021, created Metaverse.

There are three types of educational environments in the Metaverse: Interactivity, Corporeity, and Persistence. The interactivity feature, which makes this world more dynamic, sets an innovative educational scenario of autonomous and collaborative learning, enabling access to all available resources. The corporeity feature brings in the avatar, which is limitless in the virtual world, leading to a more realistically defined environment, as the shape of avatars is at par with or superior to 3D games. The persistence feature is crucial, as it helps save conversations, data, and objects even after the users depart from the virtual world (Akour et al., 2022, p. 2; see also Ando et al., 2013; Castronova, 2001; Díaz et al., 2020; Tarouco et al., 2013).

Hill (2021) has presented a unique viewpoint on the connection between the Metaverse and libraries, using the case of the Texas Library Association. He argues that librarians can contribute significantly to the Metaverse by performing various roles such as organizing exhibitions, facilitating reading discussions, creating history simulations, conducting library simulations, and storytelling. Additionally, he questions whether the involvement of librarians is necessary for the Metaverse to function effectively.

Metaverse provides a virtual learning environment for library users to take a tour to access information resources by using VR technology. New skills and competencies are necessary for librarians to offer library services to users who also require having almost the same skills and abilities. From the library perspective in Metaverse, virtual library spaces, virtual reference services, and virtual learning environments are three important virtual learning environments (Tella, Ajani, and Ailaku, 2023, p. 15). Immersive and interactive experiences for the library users should be created by library virtual spaces in the Metaverse. Although building a library within the Metaverse is still in the project and prototype stage, it will rapidly be enacted with metalibraries in parallel with increasing the development of artificial intelligence technologies, immersive technologies, and virtual technologies.

Chung (2021) briefly emphasized that Metaverse could be used as an example of the library services that operated in a virtual world. Based on this, it has been claimed that the Metaverse may be a good tool to improve the problems due to the services provided by the libraries being limited given physical constraints. One idea to improve the effectiveness of the writing is to provide a more detailed explanation of what the Metaverse is, as not all users may be familiar with the concept. This could help users better understand the potential benefits of utilizing the Metaverse for library services. Finally, it may be useful to explore potential drawbacks or challenges associated with implementing Metaverse library services, as this would provide a more balanced perspective on the topic and could help readers better understand the potential limitations of the technology.

As society continues to shift towards digital spaces, traditional physical spaces like libraries are adapting to keep up with changing reading habits and information consumption patterns. The rise of libraries within the Metaverse, a virtual reality space, presents intriguing possibilities for accessibility, knowledge dissemination, and the changing role of librarians. This emerging concept has the potential to transform the way we think about libraries and the services they offer, as well as the way we interact with information in a virtual context. Oladokun, Yahaya, and Enakrire (2023) presented a deeper exploration of this topic in a study.

Bakar et al. (2022, p. 271-272) have given a realistic approach to the relationship between Metaverse and libraries. Although Industry 4.0 is closely related to the Metaverse economy, libraries can bridge the Metaverse gap by providing devices such as VR headsets, VR studios, software, trackers and cameras, headphones, and the Metaverse grades infrastructures that enable society to experience the Metaverse. Digital representations of library materials and immersing experience in the culture and heritage of its society could also be offered by libraries within the Metaverse environment. They concluded that the library could use immersive content experience technology to enhance patrons' quest for knowledge inquisition. Finally, the article could benefit from a stronger conclusion that summarizes the key points and provides a clear call to action for librarians and other professionals interested in exploring the potential of Metaverse technologies.

Artificial Intelligence also plays a very important role in Metaverse. AI is a critical component in the development and function of the Metaverse. It powers the underlying systems that manage these vast digital environments, enabling the creation of intelligent virtual characters, personalizing user experiences, and managing complex interactions (Sebekin and Kalegin, 2023). AI can analyze user behavior and preferences to generate highly personalized content and responses. In the context of the Metaverse, AI can create highly immersive, interactive experiences that adapt to the user's needs and preferences (Amzat and Adewojo, 2023, p. 17). The integration of AI can revolutionize resource management within libraries, automating tasks such as cataloging, metadata generation, and user support. This automation, in turn, allows library staff to redirect their focus towards more strategic endeavors (Amzat and Adewojo, 2023, p. 18).

There are also ethical considerations for the users' privacy data within the Metaverse, Information technology, which is the basis of Metaverse in general, including augmented technology, immersive technology, machine learning, and artificial intelligence (Wassom, 2015). Privacy includes common law rights, electronic privacy laws, subject-specific privacy laws, and limitations on government intrusion into privacy. Advertising, marketing, and eCommerce are the fields that have to be protected by the laws in Metaverse. Patent protection, trademarks, copyrights, and the

right of publicity are the general topics that contain intellectual property rights. Real property rights, civil rights, personal ethics, and addiction and pornography are also important parts of the Metaverse, which must be considered by the librarian.

Noh (2023) argues that seven important directions are needed to realize the importance of libraries within the Metaverse. The first one is "Library as a platform" which indicates a place where a lot of things may be achieved on top of it, such as transaction platform, ecosystem platform, and multifaceted platform. The second is "Libraries as a content Mecca" which explains where the creators create the content and generate profits. The third is named "Libraries where digital assets are produced and distributed" and emphasizes that library users have the opportunity to create things through various collaborations or produce prototypes for start-ups. The fourth one is "Libraries that address the customized information needs in real time" and focuses on providing various services across different subject areas to overcome the limitations of physical libraries. The fifth one is "Libraries with remote collaboration" which allows users to freely do what they want in the place they want and collaborate and communicate amicably with others. The sixth is "Meta-Literacy libraries" which enhance digital literacy and prevent the information constraints or complaints caused by the inexperience in using technologies. The seventh and last one is "Role of the Metaverse librarians" which includes the content of the article as a whole. Metalibrarians' role has evolved into systematically storing and servicing information through the active collection of information resources while striving to optimally meet the needs of the users by searching various information resources outside of the library. Those seven directions unlocked the potential of libraries in the Metaverse. Transform libraries into a platform for various activities, a content Mecca, and a hub for creating and distributing digital assets. Create libraries that cater to customized information needs in real time, promote remote collaboration, and enhance digital literacy. Finally, acknowledge the evolving role of Metaverse librarians who actively collect and service information resources to meet users' needs.

The Metaverse is an ever-expanding virtual world that offers a range of experiences for its users. One such experience is the ability to create virtual libraries, allowing avatars to access a wealth of information from within the Metaverse itself. Among the most notable examples of such libraries are Library @ Habbo Hotel, Virtual Library @ Kitely, and Spatial.io. These libraries offer users the opportunity to browse and access a wide variety of books, journals, articles, and other digital resources, all from within the immersive environment of the Metaverse. By providing such libraries, the creators of the Metaverse are enabling users to expand their knowledge and explore new topics, enhancing the overall experience of this exciting virtual world.

The enablers who are the pioneers in the virtual world are learners, educators, and librarians. Librarians are trained to acquire, organize, and deliver high-quality materials for particular communities of users, and these skills are necessary for the future of learning in an immersive environment. So, immersive learning is an imperative tool that must be created for searching and retrieving landmarks and communities. Librarians are also responsible for gathering, presenting, and maintaining high-quality education resources within virtual worlds. Librarians can also foster participation and collaboration among multiple communities to contribute to the goal of helping people find communities and resources across the globe and the Metaverse (Hill, Vans, and Dunavant-Jones, 2017, p. 30).

Librarians create machinima which means video in a virtual environment and they are responsible for preserving them in the virtual worlds however they are unable to succeed for four reasons: 1-permission from intellectual property owners 2-limited investigation of prims (primitive objects) 3-not allowance to scan certain islands 4-non-responsive and hostile owners to obtain information.

There could be some challenges the Metalibrarian might encounter such as information overload, limited access and availability of resources, technical skills, digital divide, and ethical considerations (Tella, Ajani, and Ailaku, 2023, p. 16).

Metaliteracy is a term coined by Tom Mackey and Trudi Jacobson (2018) to describe a set of competencies that individuals need to develop to participate fully in today's information environment. These competencies include critical thinking, digital literacy, ethical use of information, and understanding the social nature of the information. Metaliteracy is essential for digital librarians and library users as they navigate the Metaverse and interact with the vast amounts of information available in this virtual world (Tella, Ajani, and Ailaku, 2023, p. 14)

Metaliteracy is being able to interact with a huge audience in real-time for digital citizens who suffer from information bombing. Digital citizenship covers numerous concepts in digital culture as prosumers. A metaliterate learner means who have metacognitive thinking about our thinking. Digital citizenship has a lot of elements such as ethical use of information, cyber security and safety, communication, privacy, and emotional intelligence.

Some of the important jargon must be considered for increasing the Metaliteracy of the library users. The creator who is responsible for posting the digital world should follow the T-H-I-N-K strategy carefully.

*T means is it true,
*H means is it helpful,
*I mean is it inspiring,
*N means is it necessary, and
*K means is it kind.

The creator can be called a prosumer (producer and consumer) who is responsible for creating user-generated content which is uploaded as posts into Second Life. Fomo means too much information is coming at you, it brings about digital dark ages. The Dark Side of Digital Culture is related to digital literacy, privacy, cyber security, and confirmation bias. Another important tenet of Metaliteracy is the preservation of digital formats: Digital formats can be gone easily rather than physical format and they cannot get them back. Most of the content is born digital media and if it is not known how to migrate or archive them into digital format, or observe how they evolve, it will be most probably lost in the Metaverse environment. Digital legacy, which is described as the property rights of any digital content in the digital environment, is another problem from the Metaliteracy perspective, which refers to intellectual property rights within the Metaverse environment. Finally, cyberbullying, which is the last terminology to be known by the Metaliteracy context, means the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature.

Towards the Requirements of Competencies for "*Metalibrarian*"

Based on the information provided earlier, it can be observed that even if the job title of Metalibrarian is not officially recognized, there are numerous competencies, skills, responsibilities, and tasks that have been added to the role of a traditional librarian. These additional responsibilities and tasks are a result of the changing landscape of library services and advancements in technology. Some of the new competencies required include knowledge of metadata standards, information architecture, and digital preservation. In addition to these technical skills, librarians are also required to have excellent communication, collaboration, and project management skills to effectively navigate the complex and evolving needs of library users. The responsibilities of a librarian have expanded beyond the traditional role of managing collections and providing reference services to include creating and managing digital content, developing online programming, and providing instruction on information literacy and metaliteracy. In essence, the role of a librarian has evolved to encompass a broader range of competencies and responsibilities.

- Metalibrarians must improve their competencies in how to create SL platforms first and must know how to design metalibrary second.
- Metalibrarians can help the educational community as immersive learning environments evolve or even merge with virtual reality and the semantic web,
- Metalibrarians must obtain Metaliteracy to be able to create and share digital content,
- Metalibrarians must collaborate with users to participate in online communities,
- Metalibrarians should protect data privacy and security and must know the information concerning intellectual property rights, civil rights, real property rights, and criminal law.
- Metalibrarian must be able to control the credibility and quality of information where served in Metalibrary,
- Metalibrarians should design a curriculum for the metalibrary users' education by integrating information and digital literacy,
- Metalibrarians should provide ongoing VR, AR, and SL training and support for library users to ensure improving their Metaliteracy skills,
- Metalibrarians should create a common culture, values, beliefs, attitudes, and behaviors related to digital citizenship and critical thinking,
- Metalibrarian is expected to be capable of creating avatars as both librarians and library users,
- A Metalibrarian is also called an SL librarian whose task is to make a balance between virtual library assignments and real-world library assignments,
- Metalibrarians should make connections among the resources by cataloging and connecting communities to share resources,
- Metalibrarians should help the avatars find virtual spaces and resources by considering the property rights in the Metaverse,
- Cataloging resources, virtual worlds, communities, and landmarks for educational simulations are the primary roles of Metalibrarians in the Metaverse. Additionally, the Virtual World Communities Database should also be designed by the Metalibrarians.

In today's Metamodernist age, librarians are required to adapt to the ever-evolving technological landscape. They must now be proficient in creating technological tools within virtual worlds and communities, and new media tools and platforms. As the world becomes increasingly interconnected, it is also essential for librarians to focus on connecting learning communities. They have to adopt a proactive approach to ensure that cataloging, classifying, archiving, and preserving resources are done efficiently, and in a manner, that meets the needs of the users. This is where the skills, competencies, and abilities of Metalibrarians come in - they are instrumental in shaping the future

of resource management in libraries. By leveraging cutting-edge technology and adapting to the changing needs of their users, librarians can continue to play a vital role in facilitating learning and research for generations to come.

Conclusion

The main objective of this paper is to explore deeper into the role of Metaverse in libraries and librarianship. The article provides an in-depth analysis of new concepts such as virtual reality, augmented reality, second life, Metaverse, metamodernism, metaliteracy, and Metalibrarian, and their relevance to real-world libraries and librarians. To achieve this objective, the article uses a systematic literature review to position the role of Metalibrarians among other target groups like educators, communicators, designers, and more, in the Metamodernism age. The literature review highlights the importance of the role of Metalibrarians in managing and organizing information in the Metaverse environment. The existing literature suggests that Metalibrarians have significant responsibilities, including designing curricula for metalibrary users, managing information resources, and providing guidance to users who navigate the Metaverse environment. They must also be equipped with the skills and competencies necessary to work in a dynamic and complex environment such as the Metaverse. Therefore, the article proposes further research to identify new roles, tasks, responsibilities, and competencies that Metalibrarians must embrace in the Metaverse environment. This research aims to provide insights into how Metalibrarians can effectively manage and organize information resources in the Metaverse, while also providing guidance and support to users in navigating this complex and ever-changing environment.

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