Valentine's Day in the Metaverse: Examining School Event Celebrations in Virtual Worlds Using an Appreciative Inquiry Approach

Manuel B. Garcia*
Educational Innovation and Technology Hub, FEU Institute of Technology
mbgarcia@feutech.edu.ph

Clievenze Karl Quejado
Educational Innovation and Technology Hub, FEU Institute of Technology
cquejado@feutech.edu.ph

Clark Raven B. Maranan
Educational Innovation and Technology Hub, FEU Institute of Technology
cbmaranan@feutech.edu.ph

Owen N. Ualat
Educational Innovation and Technology Hub, FEU Institute of Technology
onualat@feutech.edu.ph

Rossana T. Adao
Office of the Executive Director, FEU Institute of Technology
rtadao@feutech.edu.ph

ABSTRACT

Educational institutions orchestrate a variety of in-school events and activities to enrich the student experience. Given their benefits, it is crucial to encourage student participation. With the recent advent of the metaverse, there is an opportunity to engage students due to their inclination toward adopting such technologies. However, the dynamics of celebrating school events within these virtual worlds remain largely unexplored. Our study sought to address this gap by examining school event celebrations in the metaverse through an appreciative inquiry approach. During Valentine's Day, we introduced a special edition of our educational metaverse (i.e., MILES Virtual World) tailored to celebrate the occasion. We discovered that conducting school events in the metaverse requires the integration of real-life social rituals to augment students' social experiences and foster a sense of community. Moreover, the need for realism and the mirroring of real-world traditions in virtual settings emerged as critical drivers for creating more emotionally satisfying and engaging user experiences. The challenge of encouraging student participation in physical events parallels the issue encountered in virtual worlds, where students may feel discouraged from participating if they do not observe their friends' presence within the metaverse. Our study also calls for collective engagement in shaping the virtual world to ensure more inclusive, engaging, and enriched educational metaverses. As we continue to navigate the evolving landscape of immersive digital environments, the insights gained from our research underscore the importance of collaboration, innovation, and student agency in shaping the future of education.

*Corresponding Author. Dr. Manuel B. Garcia is the founding director of the Educational Innovation and Technology Hub at FEU Institute of Technology, Philippines. Email: mbgarcia@feutech.edu.ph, Website: https://manuelgarcia.info/, ORCID: 0000-0003-2615-422X

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CCS CONCEPTS

• **Human-centered computing** → Human computer interaction (HCI); HCI design and evaluation methods; Usability testing; • **Applied computing** → Education; Interactive learning environments.

KEYWORDS

Metaverse, Digital Learning, Higher Education, Immersive Technology

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1 INTRODUCTION

Educational institutions are conduits for academic instruction. They serve as a foundational pillar where students acquire essential knowledge and skills. These establishments are traditionally recognized for their role in imparting structured education, focusing on subjects that form the core of intellectual development. However, they are also dynamic environments where students engage in a broad spectrum of learning experiences. Beyond the confines of textbooks and classrooms, educational settings offer a rich tapestry of activities that extend learning into the domains of practical application [1], creativity [2], and social interaction [3]. For instance, schools orchestrate a variety of activities that enrich the educational experience, weaving together curricular activities (e.g., science fairs and math leagues) with extracurricular ones (e.g., sports meets and art exhibitions). These events, ranging from academic competitions to cultural celebrations, play a crucial role in building community [4, 5], enhancing student engagement [6, 7], and promoting a well-rounded education [8, 9]. They also offer students opportunities

to explore their interests, highlight their talents, and engage with their peers and the broader community in meaningful ways. Given the extensive benefits of these school activities [10], it becomes evident that it is the responsibility of educational institutions to ensure that students are provided with continuous opportunities to participate in them. By doing so, schools can foster a nurturing educational ecosystem that supports the growth and development of every student.

The rationale behind conducting such school events is multifaceted. Primarily, these activities serve to break the monotony of routine academic schedules, injecting excitement into the school environment. Furthermore, they play a crucial role in the holistic development of students by promoting physical well-being, enhancing emotional intelligence, and fostering the acquisition of essential social skills. Engaging in these activities enables students to learn valuable life lessons in leadership, resilience, and collaboration – skills that are indispensable in both personal and professional domains. Moreover, these events significantly contribute to strengthening school spirit and unity, creating a profound sense of belonging and pride among students and staff alike. Such a cohesive environment encourages students to support each other, celebrate diversity, and work together towards common goals, which can enhance the overall educational experience. Active participation in these events not only enriches students' academic lives but also prepares them to navigate the complexities of the real world with confidence and competence [11]. Given these benefits, it is imperative that educational institutions not only ensure but actively encourage students to participate in these events. By prioritizing involvement in such activities, schools can amplify the positive impact on students' academic and personal development. This encouragement can take various forms, from integrating event participation into the curriculum to recognizing and rewarding involvement [12]. The goal is to create an educational culture that values and promotes these experiences as essential elements of learning and growth. In doing so, educational institutions can help students realize their full potential, equipping them with the tools necessary to succeed in an ever-changing world.

In the evolving digital age, the concept of celebrating events in virtual spaces, such as the Metaverse, represents a groundbreaking shift. This transition is pivotal as the Metaverse offers immersive and interactive environments that extend beyond the physical limitations of traditional settings [13-15]. Such virtual celebrations can significantly enhance the educational experience by fostering inclusivity, as students from diverse backgrounds and with varying abilities can participate equally. They also promote engagement and digital fluency, equipping students with essential skills for navigating the increasingly digital world. In this paper, we aim to investigate the perceptions of students regarding school event celebrations in virtual worlds, utilizing the Appreciative Inquiry approach to highlight positive experiences and outcomes. This study is critical because it addresses the evolving nature of educational environments and the need to understand how virtual spaces can be optimized for learning and social interaction. As digital natives, today's students are poised to benefit from educational approaches that incorporate technology in meaningful ways. Exploring their perceptions and experiences with virtual celebrations provides valuable insights into how these events can support educational goals, enhance student engagement, and prepare them for a future where virtual and physical realities are increasingly integrated. Understanding these dynamics is crucial for educators and policymakers aiming to create inclusive, engaging, and effective learning environments in the digital age.

2 MATERIALS AND METHODS

2.1 MILES Virtual World – An Educational Metaverse

As previously described in another paper [13], MILES Virtual World is an educational metaverse application utilized by the FEU Group of Schools as a supplementary digital school environment. The environment replicates three campuses, mirroring their physical counterparts with precision. Developed with the core principles of the Embodied Social Presence Theory in mind, it aims to foster a sense of presence and community within a virtual environment. Within this metaverse, students can create and customize their virtual avatars as a means of enhancing their sense of identity and belonging in the virtual space. They can also purchase virtual items and accessories to personalize their experience further and express their individuality. This feature not only enriches the interactive experience but also mirrors real-world social dynamics, encouraging engagement and participation in the virtual school community [16]. For this study, we selected MILES Virtual World due to our direct access to this application, enabling us to redesign or add features necessary for conducting our research. More importantly, this access allows us to tailor the virtual environment to suit the specific requirements of this study, such as facilitating the creation of customized scenarios, activities, and interactions. In terms of the event, we selected Valentine's Day because it was the most recent school celebration at the time of the study.

2.2 Celebrating Valentine's Day in MILES Virtual World

In preparation for the celebration of Valentine's Day within MILES Virtual World, significant enhancements and redesigns were undertaken to enrich the virtual environment. This process ensures the alignment of the metaverse application with the thematic essence of the occasion. Virtual objects emblematic of Valentine's Day, such as heart-shaped decorations, virtual roses, and life-sized teddy bears (Figure 1), were strategically placed throughout the digital replication of the campuses to immerse students in the festive atmosphere. Furthermore, introducing new custom avatars and an array of Valentine-specific virtual items available for purchase allowed students to personalize their experience further. A notable addition to the virtual world was the photo booth feature (Figure 2). This feature provided a space where students could capture and share moments with friends, enhancing social connectivity and engagement within the virtual environment. Such a feature not only facilitated the creation of digital memories but also mirrored the evolving trends in social interaction among students. The centerpiece of the Valentine's Day celebration was the marriage booth (Figure 3). This interactive experience allowed students to

Figure 1: Valentine-Inspired Campus.

Figure 2: Photo Booth

engage in a virtual marriage ceremony, offering a playful and engaging way to explore social dynamics and relationships within a safe and controlled virtual setting. The marriage booth served not only as an entertainment feature but also as a unique medium for role-playing and social experimentation. Overall, this approach to celebrating Valentine's Day in MILES Virtual World highlights the innovative potential of educational metaverses to host immersive and interactive school event celebrations.

2.3 Research Design and Evaluation Procedures

We adopted a qualitative approach through appreciative inquiry to explore the positive aspects of the virtual school event and its impact on the student community. With its emphasis on identifying the strengths of a given situation or system [17], appreciative inquiry provided a constructive framework for our study. Specifically, the interview questions we crafted were based on the 4-D cycle of appreciative inquiry, which encompasses Discovery, Dream, Design, and Destiny (see Table 1). Interviews were conducted on the same day as the launch, which was strategically planned for Valentine's Day itself. To ensure ample opportunity for engagement and participation, the Valentine's edition of MILES Virtual World remained accessible to students until the last day of February 2024. This period was chosen to maximize the relevance and immersion of the event, aligning with real-world celebrations of Valentine's Day. Notably, our marriage booth within the virtual world mirrored a similar activity in the physical world. This setup offered a unique parallel between virtual and real-world interactions. Students who attended the physical event were invited to playtest the metaverse version. By involving participants who experienced both the physical and virtual versions of the marriage booth, we aimed to draw nuanced comparisons and insights into the affordances

Figure 3: Marriage Booth

Table 1: Interview Questions Based on the 4-D Cycle of Appreciative Inquiry

Phase	Interview Questions
Discover (What gives life?)	•Can you share a memorable experience you had during the Valentine's Day celebration in MILES Virtual World? •What aspects of the virtual environment made you feel most connected to your peers during the virtual Valentine's Day celebration? •Describe a moment when you felt truly engaged or immersed in the Valentine's Day activities within the metaverse. What made it special?
Dream (What might be?)	•Imagine the ideal Valentine's Day celebration in MILES Virtual World. What elements would make it perfect for you? •If you could add any feature or activity to enhance the Valentine's Day celebrations in the metaverse, what would it be? •How do you envision virtual school celebrations evolving in the future to better foster student community and engagement?
Design (What should be?)	•Based on your experiences, what specific improvements or additions would you suggest for the next Valentine's Day celebration in MILES Virtual World? •How could the metaverse application be modified to better facilitate social interactions and connections during celebrations? •What role do you think customizable avatars and virtual items play in enhancing the celebration experience? How can these features be improved?
Destiny (How to empower, learn, and adjust?)	•What steps can be taken to ensure that the redesigned Valentine's Day celebration in MILES Virtual World is inclusive and engaging for all students? •How can we measure the success of the next Valentine's Day celebration in the metaverse? What indicators should we look for? •After participating in the celebration, what changes or actions are you inspired to take to contribute to an improved virtual community experience?

and limitations of virtual spaces for replicating and enhancing traditional social events. Through this qualitative research design and appreciative inquiry methodology, our study sought to uncover the potential of metaverses like MILES Virtual World in fostering meaningful social connections and enhancing the educational experience beyond conventional classroom settings.

3 RESULTS AND DISCUSSION

3.1 Discover (What gives life?)

Building upon the findings that minigames and interactive activities are highly requested features among students in the metaverse, we incorporated photo and marriage booths into our Valentine's edition of MILES Virtual World. This decision was substantiated by

our findings, which revealed that such interactive and celebration-themed features significantly contributed to the vibrancy and engagement of the school celebration. As highlighted by many participants, the virtual marriage booth represents a novel approach to fostering social interaction within a virtual educational setting. To further enrich this interactive experience, there is also a feature that allows students to deliver virtual vows during the ceremony, adding a layer of personalization and emotional depth to the event. Additionally, the entire ceremony is broadcast to all students within the vicinity of the marriage booth, enabling a communal celebration that amplifies the sense of unity and engagement within our metaverse. One student recounted the excitement and novelty of participating in a virtual marriage ceremony with a friend—" *This virtual marriage thing was a first for us. It felt surprisingly fun and genuine, like we were part of something special. It's definitely a highlight of our time in the MILES Virtual World.*"—underscores the capacity of such features to enhance social connectivity. This experience aligns with the concepts of the Embodied Social Presence Theory [18], which suggests that effective communication in virtual environments can lead to a stronger sense of presence and, consequently, deeper social connections. From a practical standpoint, this finding indicates that educational metaverses can benefit from integrating features that simulate real-life social rituals that enrich students' social experience and foster a community spirit within the virtual environment [19].

Similarly, the engagement observed around the photo booth offers compelling insights into the dynamics of interaction and shared experiences in virtual environments. Participants expressed a particularly strong connection to moments captured at the photo Booth, with one remarking, "*Taking that selfie with the gang was a blast. It was more than a photo; it was like we were really there, together, in something way real.*" This sentiment underscores the role of shared experiences in crafting a sense of togetherness and community among users despite the inherent physical separation of virtual interactions. From a theoretical perspective, this phenomenon can be better understood through the lens of the Community of Inquiry framework, which emphasizes the importance of social, cognitive, and teaching presences in creating a meaningful educational experience. While traditionally applied to online learning, the principles of this model are equally relevant in the context of immersive environments [20]. The social presence, or the ability of participants to project themselves socially as 'real' people, is particularly highlighted by such activities. Furthermore, collective enjoyment and shared experiences have practical implications for the design and implementation of virtual environments [21]. Recognizing the value of such features suggests that developers and educators should prioritize creating spaces and activities within educational metaverses that promote social bonding and communal engagement. Incorporating elements that allow for personal expression and shared memories can significantly enhance the sense of community, which makes virtual learning spaces more inviting and engaging for students.

3.2 Dream (What might be?)

In real-world Valentine's Day celebrations, exchanging gifts such as flowers is a part of the tradition and a means of expressing affection. This desire for sending and receiving gifts extends into the virtual domain, as evidenced by our participants' expressed interest in incorporating a virtual gift exchange system within the MILES Virtual World. One participant enthused, "*Just imagine clicking 'send' on a virtual bouquet for her. I personally believe it is also romantic and would add so much more depth to the way we connect with other students in the MILES Virtual World.*" This sentiment underscores the intrinsic human desire to express and receive tokens of appreciation, regardless of the environment's physicality. The implications of integrating a virtual gift exchange system can be explored through the lens of the Uses and Gratifications Theory [22], which seeks to understand why and how individuals actively seek out media to satisfy specific needs. In the context of a virtual environment, the ability to exchange gifts could fulfill users' desires for social interaction, personal identity, and integration into a community, thereby enhancing their overall experience [13]. From a practical perspective, adding functionalities that support such exchanges could significantly enrich the metaverse's social fabric. By enabling users to convey emotions and maintain relationships through virtual gifts, educational metaverses can foster a more engaging and emotionally satisfying user experience, mirroring the complex dynamics of real-world social interactions.

Envisioning virtual school celebrations extending beyond Valentine's Day into a myriad of events within the metaverse can serve as a powerful tool to foster student engagement and participation. This vision is driven by the observation that students actively seek out their real-life friends within these virtual spaces yet often find that many are not participating. One participant captured this sentiment by stating, "*It feels like we're on the brink of something amazing, but it's just not the same without all my friends there. If we could get everyone involved, it would make virtual school events better.*" This desire for broader participation underscores the potential of virtual celebrations to supplement and enrich real-world school events, providing an inclusive platform for all students to engage, regardless of physical or geographical constraints. The role of schools in facilitating these inclusive virtual environments can be framed within the Ecological Systems Theory, which emphasizes the various environmental systems and their impact on an individual's development [23]. In applying this theory, schools act as a microsystem that can profoundly influence student experiences by adopting and promoting virtual celebrations as a core aspect of school culture. By doing so, schools can encourage a sense of belonging and community, making virtual spaces more attractive and engaging for students. From a practical standpoint, schools should take an active role in promoting these virtual events, perhaps through incentives or educational credits, to ensure higher participation rates. Integrating virtual celebrations into the school's official calendar and involving students in the planning and execution can further enhance their appeal, making the virtual school experience a vibrant complement to traditional schooling. Through concerted efforts, schools can bridge the gap between physical and virtual, creating a cohesive community where every student feels valued and connected.

3.3 Design (What should be?)

Reflecting on the feedback from participants, it becomes evident that students yearn for a virtual experience that mirrors the complexities and nuances of real-life interactions. The desire for realism in the virtual world suggests a need for features that enable more authentic social interactions [24, 25]. For example, one participant humorously remarked, "*Just imagine getting a virtual proposal out of the blue—it's like, 'Wait, do I even know you?' It's crucial to have some virtual courting before jumping into marriage!*" This sentiment highlights the demand for a feature allowing individuals to invite others to Valentine's Day events or the marriage booth, emulating the natural progression of relationships found in the physical world. Despite the availability of voice communication and chat features in our metaverse application, which facilitates straightforward interaction, there is still a call for more nuanced social dynamics that reflect real-world social cues and rituals. Another participant suggested the implementation of a virtual wall where students can post messages, artwork, or dedications, adding, "*It would be like our little corner of the Metaverse where we can leave a piece of us for friends or that special someone to find.*" This idea underscores the desire for personalized spaces within the virtual environment that allow for expression and recognition among peers. From a theoretical perspective, these suggestions align with the Media Richness Theory, which posits that communication media vary in their capacity to convey information and foster understanding [26]. Incorporating features that add layers of social nuance and personalization into the virtual environment can enhance the richness of communication, making interactions more meaningful and reflective of real-life dynamics [27]. Practically, these enhancements could significantly improve student engagement and satisfaction by providing a more immersive and authentic virtual experience. As a result, this integration may strengthen the educational and social fabric of the virtual school community.

The feedback from participants also illuminates the importance of diversifying the range of Valentine-themed activities within the virtual world, catering to the varied perspectives and preferences of students regarding the celebration of Valentine's Day. Acknowledging that not all students are interested in or comfortable with dating and romantic relationships, there's a clear demand for inclusive, interactive virtual games that embody the spirit of Valentine's Day without centering on romantic involvement. "Valentine's Day isn't just for couples. In my opinion, it's about celebrating all forms of love. It'd be great to have activities of games that everyone can enjoy, regardless of their relationship status," one participant expressed, emphasizing the inclusivity aspect. This perspective advocates for the development of games and activities that focus on friendship, self-love, and community, providing alternative ways for students to participate in the celebrations. The call for a broader array of Valentine-themed activities aligns with the Self-Determination Theory, which emphasizes the importance of satisfying individuals' inherent psychological needs for autonomy, competence, and relatedness [28]. By offering a variety of games and activities that do not exclusively cater to romantic themes, virtual environments can better support students' autonomy in choosing how they wish to engage, their competence through skillful participation in diverse games, and their relatedness by connecting with others over shared interests and values. From a practical standpoint, implementing these inclusive and varied activities within the virtual world could foster a more welcoming and engaging environment for all students. This approach not only respects individual differences but also enriches the communal experience of Valentine's Day, ensuring that the celebration is meaningful and enjoyable for the entire school community, irrespective of students' relationship statuses.

3.4 Destiny (How to empower, learn, and adjust?)

Following their interactions in MILES Virtual World, students have come to recognize their significant role in influencing the platform's development through their suggestions and feedback. This realization empowers them to actively contribute to shaping the virtual environment to better suit their needs and preferences. One student encapsulated this sentiment by stating, "*We're not just users because we can be co-creators of this digital universe. Our ideas can help make this world what we dream it to be*!" This statement reflects a growing understanding among students that their input is not only valued but essential for the continuous improvement and customization of the metaverse application. Another avenue for this collaborative innovation is the partnership between students and teachers in conceptualizing educational activities that can be integrated into school events within the metaverse. "*Working together, we can design experiences that are not just fun but also enrich our learning*," one student shared, highlighting the potential of these partnerships to enhance the educational value of virtual events. By sharing constructive feedback based on their user experiences, students can collaborate with developers in a dynamic process of innovation and enhancement. This collaborative approach fosters a sense of ownership and investment in the virtual environment, encouraging students to propose features and modifications that reflect their desires for more engaging, inclusive, and meaningful virtual experiences [16].

This approach aligns with the principles of Participatory Design, which advocates for the inclusion of end-users in the design process to ensure the final product meets their needs and preferences [29]. By engaging students in the feedback loop, developers can harness their insights to refine and expand the application's features, making the virtual environment more aligned with the users' expectations and requirements. Similarly, the collaboration between students and educators in creating content-specific activities further enriches the virtual learning experience, seamlessly integrating educational objectives with the immersive world of the metaverse. This practice not only ensures that the metaverse application continually evolves to better serve its educational purpose but also empowers students by acknowledging their role as co-creators of their virtual learning space. Consequently, fostering a collaborative atmosphere between students, developers, and educators can lead to a more dynamic and responsive educational tool. This partnership directly contributes to a richer, more engaging, and practical learning experience. Such a collaborative dynamic not only bolsters the application's relevance and utility but also strengthens the educational community by promoting a culture

of innovation, inclusivity, and shared ownership over the digital learning environment [9, 30, 31].

4 CONCLUSION

As the integration of metaverse into education continues to gain momentum, the interest in exploring their potential to enhance the educational experience is growing. Despite this increasing attention, there remains a notable gap in understanding the dynamics and impact of digital school event celebrations within these virtual worlds. Our study addressed this gap by employing an appreciative inquiry approach to explore students' perceptions of school event celebrations in virtual worlds, focusing on the unique case of Valentine's Day in the MILES Virtual World. Our findings, structured around the 4-D cycle of Appreciative Inquiry, revealed significant insights. We found that celebration-themed features significantly enhance the engagement and vibrancy of the event. This finding underscores the value of integrating real-life social rituals into educational metaverses to enrich students' social experiences and foster community spirit. The aspiration to mirror real-world traditions in virtual settings emerged as a key driver for creating more emotionally satisfying and engaging user experiences. Furthermore, our study highlighted the importance of diversifying the range of activities to cater to all students' preferences and ensure inclusivity. For instance, the event being Valentine's Day does not mean that activities must solely focus on romantic relationships. Instead, they should celebrate all forms of love and friendship to engage the entire student body. Celebrating school events in the metaverse likewise emphasizes the need for active promotion. Based on our findings, students may feel discouraged from participating in virtual events if they do not see their friends in the metaverse. Crucially, our findings reveal their awareness of their essential role in co-designing the virtual environment. Such a collective engagement in shaping the virtual world highlights the potential of educational metaverses to offer a more inclusive, engaging, and enriched learning experience.

Overall, these results are significant because they illuminate the multifaceted value of virtual school event celebrations in promoting engagement, inclusivity, and a sense of community among students. They also highlight the potential of such events to serve as platforms for innovative experiences, provided there is a concerted effort to incorporate educational content and acknowledge student input in the design process. The general implication of this study is that a metaverse like the MILES Virtual World offers fertile ground for reimagining the future of education. By leveraging the unique capabilities of these digital platforms, metaverse adopters can provide engaging, inclusive, and educationally valuable experiences that resonate with the needs and preferences of the digital-native generation. In conclusion, this study reinforces the notion that the metaverse and virtual worlds hold untapped potential for enriching educational experiences. As we continue to navigate the evolving landscape of digital learning, the insights gained from this research underscore the importance of collaboration, innovation, and student agency in shaping the future of education. Through a collective endeavor to harness the power of virtual worlds, we can open new horizons for learning that are as boundless as the imagination itself.

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