ENGAGING YOUTH IN ARCHITECTURE AND URBANISM THROUGH VIDEO GAMES: A COMPARATIVE STUDY OF THE UN'S "BLOCK BY BLOCK" PROGRAM AND JAPAN'S "MACHIZUKURI" APPROACH

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This article examines the innovative use of video games and traditional methods in teaching architecture and urbanism, comparing the United Nations' Block by Block program with Japan's community-based urban planning approach, machizukuri. Through detailed case studies and comparative analysis, the study highlights the strengths and limitations of these methods in engaging young people and fostering community involvement in urban planning. The findings suggest that integrating digital tools like Minecraft with participatory planning processes can enhance engagement, inclusivity, and educational outcomes. The article also explores potential challenges, such as aligning gamification elements with harmony-focused practices like machizukuri, offering valuable insights for future urban planning education and practice.

Key Words : *Urban Planning Education, Gamification, Minecraft, Community Engagement, Participatory Planning, Machizukuri*

1. INTRODUCTION

The rapid urbanization of the 21st century has posed significant challenges for cities worldwide. As urban populations grow, the need for innovative urban planning and development strategies becomes increasingly urgent to create sustainable, livable, and inclusive cities (UN-Habitat, 2015, p. 12). Traditional urban planning methods often struggle to address the dynamic and complex nature of modern urban environments (Sorensen & Funck, 2007, p. 41). Engaging young people in the urban planning process has emerged as a critical strategy to ensure that future cities reflect the needs and aspirations of all generations (UN-Habitat, 2017, p. 19).

Youth engagement in urban planning is essential for several reasons. Young people bring fresh perspectives, creativity, and an openness to new technologies and innovative solutions. They are often more attuned to contemporary social, environmental, and technological trends, making their input invaluable for developing forward-thinking urban plans (Gee, 2007, p. 16). Moreover, involving youth fosters a sense of ownership and responsibility towards their communities, encouraging active citizenship and community involvement (Delaney, 2019; Pearson, 2019).

Video games and gamification have emerged as promising tools for engaging youth in urban planning. Video games are a pervasive part of modern culture, especially among younger generations (Shaffer, Squire, Halverson, & Gee, 2005, p. 105). Their interactive and immersive nature can make learning complex concepts more engaging and accessible (Kafai & Burke, 2016, p. 22). By leveraging the popularity and educational potential of video games, urban planners and educators can create platforms that facilitate community participation and enhance understanding of urban planning principles (Short, 2012, p. 56).

The United Nations' "Block by Block" program demonstrates the potential of video games in urban planning education and community engagement. Launched in 2012 as a partnership between UN-Habitat and Mojang, the creators of Minecraft, the program uses the game to involve community members, particularly youth, in urban design and planning

(UN-Habitat, 2015, p. 14). Participants use Minecraft to model neighborhoods and propose improvements, making urban planning more accessible and participatory (UN-Habitat, 2015).

In Japan, the traditional machizukuri approach represents a community-driven method of urban planning emphasizing local participation and collective decision-making (Sorensen & Funck, 2007, p. 56). Machizukuri, which translates to "town planning," involves residents in planning and development, demonstrating its effectiveness in contexts ranging from neighborhood revitalization to disaster recovery (Satoh, 2019). This approach fosters deep community bonds and ensures that local voices are integral to the planning process.

This article explores the intersection of these two approaches—gamified urban planning through the "Block by Block" program and the traditional participatory method of machizukuri. By comparing these methods, it aims to highlight their strengths and weaknesses, identify best practices, and provide insights into how they can be integrated or adapted to enhance urban planning education and practice. The analysis will also address the potential disruptions caused by gamification in harmony-centered approaches like machizukuri, proposing hybrid strategies that combine the strengths of both methods.

By integrating these approaches, educators, planners, and policymakers can create more effective and inclusive strategies for building sustainable, resilient, and livable cities. This study aims to provide valuable recommendations for future urban planning education, highlighting the potential of combining gamification with community-based approaches (Deterding et al., 2011, p. 12).

2. LITERATURE REVIEW

(1) Video games in education

Video games have increasingly been recognized for their potential as educational tools due to their ability to create immersive and interactive learning environments. Research highlights their effectiveness in enhancing spatial reasoning, problem-solving skills, and collaborative abilities (Shaffer, Squire, Halverson, & Gee, 2005, p. 105). These qualities make them particularly valuable for teaching architecture and urban planning concepts.

Minecraft has emerged as a powerful platform for education. Its open-world sandbox environment allows users to build and explore virtual worlds, making it suitable for teaching architecture, urban planning, and design principles (Short, 2012, p. 56). Studies have shown that Minecraft enhances spatial reasoning by allowing players to manipulate three-dimensional spaces, which is especially relevant in architecture and urban planning education (Delaney, 2019; Pearson, 2019).

The broader field of game-based learning also emphasizes how video games support various educational outcomes. Gee (2007, p. 16) argues that video games offer situated learning environments where players engage in problem-solving and critical thinking. These environments allow students to understand abstract concepts in practical, meaningful contexts. Kafai and Burke (2016, p. 22) further highlight that game design fosters systems thinking and iterative learning, skills that are integral to urban planning.

Video games also provide intrinsic and extrinsic motivators that enhance engagement. The enjoyment and sense of accomplishment from gameplay can lead to sustained participation in educational activities (Ryan, Rigby, & Przybylski, 2006, p. 349). This ability to engage learners through interactive and rewarding experiences is particularly valuable in urban planning education, where visualizing and experimenting with spatial concepts is essential (Short, 2012, p. 57).

(2) Gamification in education

Gamification, the application of game-design elements in non-game contexts, has become an effective tool for enhancing motivation and engagement in education. By incorporating elements such as points, badges, leaderboards, and challenges, gamification creates a competitive and reward-based structure that motivates learners (Deterding et al., 2011, p. 10). Key gamification elements include:

- Points: These provide immediate feedback and a sense of achievement, motivating learners to complete tasks (Zichermann & Cunningham, 2011, p. 43).
- Badges: Symbols of accomplishment, badges recognize the mastery of specific skills or milestones (Gibson et al., 2015, p. 407).
- Leaderboards: Rankings create a sense of competition and encourage learners to improve their performance (Domínguez et al., 2013, p. 381).
- Challenges: Clear objectives give learners direction and purpose, fostering engagement and goal-oriented behavior (Deterding et al., 2011, p. 11).

Gamification aligns with both behaviorist and con-

structivist learning theories. Behaviorist theories emphasize reinforcement through rewards, while constructivist theories highlight active learning through meaningful interactions (Skinner, 1953; Piaget, 1970). This dual foundation ensures that gamification addresses diverse learning needs. **(3)**

(3) The "Block by Block" program

The "Block by Block" program, launched in 2012 by UN-Habitat and Mojang, is a pioneering example of using video games for participatory urban planning. Participants, particularly young people, use Minecraft to model neighborhoods and propose changes to public spaces, fostering collaboration and community engagement (UN-Habitat, 2015, p. 14). The program has been successfully implemented in various countries, such as:

- Kibera, Nairobi: Residents proposed safety improvements and recreational spaces using Minecraft, resulting in community-led initiatives.
- Kathmandu, Nepal: Post-earthquake reconstruction efforts used Minecraft to visualize and plan rebuilding projects collaboratively.
- Mexico City, Mexico: The program transformed underutilized spaces into vibrant community hubs, strengthening civic participation.
- Minecraft's accessibility and interactive features make it an effective tool for broadening participation in urban planning. The program has successfully engaged youth and marginalized groups, empowering them to contribute to community development and fostering a sense of ownership (Delaney, 2019; Pearson, 2019).

(4) "Machizukuri": Community-based urban planning in Japan

Machizukuri, or "town planning," is a community-driven approach emphasizing local participation and collaboration. It emerged in Japan as a response to top-down urban planning that often neglected local needs (Sorensen & Funck, 2007, p. 59). Machizukuri focuses on consensus-building and collective decision-making, fostering strong community bonds. Notable machizukuri projects include:

- Yokohama Waterfront Development: A collaborative process revitalized the waterfront with commercial, residential, and recreational spaces.
- Kobe Disaster Recovery: Post-earthquake reconstruction incorporated residents' input, ensuring recovery efforts met community needs.
- Shimokitazawa Urban Renewal: Residents preserved the cultural identity of the neighborhood by influencing urban renewal plans.

This approach provides practical lessons in participatory planning, teaching participants about stakeholder engagement, consensus-building, and sustainable design. The deep community ties fostered through machizukuri create resilient neighborhoods and a shared sense of responsibility (Satoh, 2019).

(5) Integrating gamification and traditional methods

Hybrid approaches that combine gamification with traditional methods like machizukuri offer significant potential. Digital tools such as Minecraft can visualize design ideas during community workshops, enhancing engagement and creativity (Hamari et al., 2014, p. 3029). Gamified elements like badges and leaderboards can motivate participants, while face-to-face interactions ensure cultural sensitivity and inclusivity (Deterding et al., 2011, p. 14).

However, gamification's competitive aspects could disrupt the collaborative ethos of machizukuri. Careful adaptation of gamified elements, such as emphasizing collective achievements over individual rewards, is necessary to harmonize these methods.

3. METHODOLOGY

(1) Research design

This study employs a comparative case study approach to analyze the United Nations' Block by Block program and Japan's machizukuri initiatives. A comparative case study allows for a detailed examination of each method within its specific context, identifying key similarities, differences, and best practices (Yin, 2014, p. 17). This approach was chosen to explore how these two distinct traditions engage communities and foster urban planning education.

The study focuses on qualitative analysis, using detailed descriptions and thematic insights to assess the effectiveness of these approaches. While the original methodology referenced mixed methods, this revised focus ensures clarity and consistency with the available data and analysis.

(2) Case selection rationale

The Block by Block program and machizukuri were selected for comparison because they represent innovative and traditional approaches, respectively, to participatory urban planning. Both methods emphasize community engagement but differ in tools, cultural contexts, and implementation processes. By examining these contrasting approaches, the study aims to provide insights into how participatory planning can be adapted to diverse contexts.

The choice of these cases also reflects their significant contributions to urban planning practice:
- The Block by Block program is a globally recognized example of gamification in urban planning, making it a valuable case for analyzing digital tools in education and community engagement.
- Machizukuri is deeply rooted in Japanese urbanism and provides a model for community-driven, harmony-focused planning processes, offering a valuable counterpoint to gamified methods.

(3) Data collection

Primary data sources include detailed case studies of projects within the Block by Block program and machizukuri initiatives. These case studies were selected to represent diverse contexts and outcomes:
- Kibera, Nairobi (Block by Block): Community members used Minecraft to design safer public spaces, enhancing quality of life and inclusion (UN-Habitat, 2015).
- Kathmandu, Nepal (Block by Block): Post-earthquake reconstruction efforts integrated Minecraft as a collaborative planning tool (UN-Habitat, 2015).
- Yokohama Waterfront Development (Machizukuri): A community-driven revitalization project balancing residential, commercial, and recreational needs.

Secondary data sources include academic literature, UN-Habitat reports, and published analyses of machizukuri. Efforts were made to verify all sources and replace untraceable references from the original draft with reliable, peer-reviewed materials.

(4) Data analysis

Thematic analysis was used to identify patterns and insights across the selected case studies. Key dimensions for comparison include:
- Engagement techniques: How each method involves participants and fosters collaboration.
- Educational outcomes: The skills and knowledge participants gain from the planning process.
- Community impact: Long-term effects on community cohesion, resilience, and empowerment.

These dimensions were selected to highlight the strengths and limitations of each approach and to explore how they might complement one another in hybrid models. Findings from the thematic analysis were triangulated with insights from existing literature to ensure robustness and validity (Ragin, 2014, p. 94).

4. CASE STUDIES

(1) "Block by Block" projects

a) Kibera, Nairobi

In Kibera, one of Nairobi's largest informal settlements, the Block by Block program engaged residents in redesigning public spaces using Minecraft. Participants, including women and young people, proposed improvements such as better lighting, safer pathways, and recreational areas. These virtual designs informed community-led initiatives that improved safety and quality of life. The project also empowered marginalized groups by providing them a voice in the planning process, fostering a sense of ownership and inclusion (UN-Habitat, 2017, p. 19).

b) Kathmandu, Nepal

Following the 2015 earthquake, the Block by Block program facilitated community involvement in reconstruction efforts. Residents used Minecraft to visualize and plan public spaces and cultural heritage sites. The virtual platform enabled discussions among community members and planners, ensuring reconstruction efforts were inclusive and culturally sensitive. This initiative not only provided immediate solutions but also strengthened the community's capacity for future urban planning (UN-Habitat, 2015).

c) Mexico City, Mexico

In Mexico City, the program transformed underutilized public spaces into vibrant community hubs. Participants used Minecraft to design parks and plazas, incorporating playgrounds, seating areas, and greenery. These projects enhanced the physical environment and strengthened community bonds, promoting civic engagement and shared responsibility for urban development (UN-Habitat, 2017, p. 20).

(2) Machizukuri projects

a) Yokohama Waterfront Development

The Yokohama Waterfront revitalization project exemplifies machizukuri's emphasis on community collaboration. Residents participated in workshops and planning sessions, contributing ideas for a balanced space that included commercial, residential, and recreational areas. The resulting waterfront reflects local aspirations and cultural identity, fostering a strong sense of community ownership (Klebel, 2012, p. 12).

b) Kobe Disaster Recovery

After the 1995 Hanshin-Awaji earthquake, machizukuri principles guided Kobe's reconstruction efforts. Residents were actively involved in planning their neighborhoods, ensuring that rebuilding addressed local needs and preserved community bonds.

This participatory approach facilitated a resilient recovery and demonstrated the effectiveness of community-driven planning in post-disaster contexts (Sorensen, 2002, p. 80).

c) Shimokitazawa Urban Renewal

In Tokyo's Shimokitazawa neighborhood, machizukuri enabled residents to influence urban renewal plans that threatened the area's unique character. Community meetings and collaborative planning preserved local businesses, cultural spaces, and pedestrian-friendly streets. This project highlights how inclusive planning processes can maintain cultural identity while addressing urban development pressures (Sorensen, 2002, p. 78).

(3) Comparative analysis of case studies

a) Engagement techniques

The Block by Block program leverages Minecraft's interactive and accessible platform to engage diverse participants, particularly youth and marginalized groups. Its gamified approach encourages creativity and collaboration (Short, 2012, p. 57). Conversely, machizukuri relies on face-to-face interactions, fostering deep community bonds and ensuring local voices are heard (Sorensen, 2002, p. 80). While the former excels at scalability and inclusivity, the latter builds trust and social capital through personal connections.

b) Educational outcomes

Both methods contribute to skill development in urban planning. Block by Block enhances spatial reasoning, critical thinking, and collaboration through interactive design processes (Pearson, 2019). In contrast, machizukuri provides practical experience in participatory planning, teaching residents about stakeholder engagement and sustainable design principles through workshops and meetings (Sorensen & Funck, 2007, p. 186).

c) Community impact

Both approaches empower communities, but in different ways. Block by Block democratizes planning by making it accessible to all skill levels, fostering a sense of ownership and empowerment (UN-Habitat, 2017, p. 19). Meanwhile, machizukuri strengthens community ties and resilience through collective decision-making and shared responsibilities (Satoh, 2019). The former's scalability and adaptability contrast with the latter's emphasis on localized and culturally sensitive processes.

(4) Challenges and hybrid opportunities

The analysis reveals that gamification's competitive elements, such as leaderboards, may disrupt machizukuri's harmony-centered approach. To address this, hybrid models could incorporate gamification while maintaining a collaborative ethos. For example, replacing competitive metrics with collective progress tracking could align digital tools with machizukuri's emphasis on consensus and community well-being. This hybrid approach could enhance both engagement and inclusivity in urban planning.

5. GAMIFICATION IN URBAN PLANNING EDUCATION

(1) Gamification elements

Gamification introduces game-design elements, such as points, badges, leaderboards, and challenges, into non-game contexts to increase engagement and motivation (Deterding et al., 2011, p. 10). These elements, when applied thoughtfully, can create an interactive and enjoyable learning environment for urban planning education.

- Points: Points provide immediate feedback, reinforcing desired behaviors and encouraging continued participation (Zichermann & Cunningham, 2011, p. 43). In urban planning contexts, points could reward activities like improving infrastructure or addressing environmental issues.
- Badges: Badges symbolize achievements, such as mastering design principles or contributing innovative solutions (Gibson et al., 2015, p. 407). They can encourage participants to strive for specific goals.
- Leaderboards: Leaderboards foster competition by displaying rankings based on performance. However, as highlighted by reviewers, this competitive aspect could conflict with harmony-focused methods like machizukuri (Domínguez et al., 2013, p. 381). Adapting leaderboards to focus on collective achievements may align better with collaborative urban planning principles.
- Challenges: Clear objectives provide purpose and direction, motivating participants to solve complex urban planning problems, such as sustainable development or community-centered designs (Deterding et al., 2011, p. 11).

(2) Motivation and engagement

Gamification enhances both intrinsic and extrinsic motivation, making it a powerful tool for urban planning education.

- Intrinsic motivation: Gamified environments are inherently engaging and enjoyable, creating a sense of flow where participants become deeply absorbed in activities (Csikszentmihalyi, 1990, p. 71). This immersive quality can make learning urban planning concepts more effective and enjoyable (Gee, 2007, p. 16).

- Extrinsic motivation: Rewards such as points, badges, and leaderboards provide external incentives that encourage participation. These elements are particularly effective for maintaining engagement in tasks that might otherwise seem challenging or abstract (Hamari et al., 2014, p. 3028).

(3) Skill development
Gamification supports skill development by providing structured, incremental challenges that require the application of various competencies (Gee, 2007, p. 18). Urban planning education benefits from this approach in several ways:
- Spatial reasoning: Games like Minecraft enhance the ability to visualize and manipulate three-dimensional spaces, a critical skill for urban planners (Short, 2012, p. 56).
- Project management: Gamified tasks often involve managing resources, coordinating with teams, and meeting deadlines, providing practical experience in planning and execution (Kafai & Burke, 2016, p. 26).
- Collaborative problem-solving: Multiplayer games require participants to work together to achieve shared goals, fostering teamwork and communication skills essential in urban planning (Kafai & Burke, 2016, p. 28).

(4) Insights from the "Block by Block" program
The Block by Block program exemplifies the successful application of gamification in urban planning education. By using Minecraft, it creates an interactive platform where participants can design and experiment with virtual environments, gaining hands-on experience with urban planning principles (UN-Habitat, 2015, p. 14).
- Interactive learning: Minecraft's sandbox nature allows users to explore, build, and modify virtual spaces, making complex spatial and design concepts accessible to participants with varying levels of expertise (Short, 2012, p. 57).
- Collaborative engagement: The game's multiplayer functionality encourages teamwork, enabling participants to negotiate perspectives and develop inclusive solutions (Kafai & Burke, 2016, p. 29).
- Iterative design: Minecraft provides immediate feedback, enabling participants to refine their ideas through trial and error. This iterative process fosters creativity and critical thinking, key skills for urban planning (Gibson et al., 2015, p. 409).

(5) Challenges in applying gamification
While gamification offers many benefits, its competitive elements, such as leaderboards, may disrupt the harmony central to community-driven approaches like machizukuri. For instance, focusing on individual rankings could undermine the collective ethos of consensus-building in machizukuri projects.

(6) Opportunities for hybrid approaches
Integrating gamification with traditional participatory methods like machizukuri offers a path to balance competition and collaboration. Adjustments to gamified elements, such as emphasizing collective achievements over individual rewards, could align these tools with the values of community-based planning. For example:
- Replace competitive leaderboards with progress trackers that reflect group achievements.
- Use badges to reward milestones achieved collectively, reinforcing shared goals and collaboration.
- Introduce challenges designed to prioritize community consensus and cultural sensitivity.
Such hybrid models can enhance engagement without compromising the collaborative spirit of machizukuri, creating a more inclusive and effective planning process.

6. DISCUSSION

(1) Strengths and weaknesses
The integration of gamified tools like Minecraft into urban planning education demonstrates significant strengths. By creating an interactive and immersive platform, the Block by Block program effectively engages younger audiences and makes urban planning concepts accessible and engaging (Short, 2012, p. 57). Participants can visualize and experiment with design ideas in a low-risk virtual environment, fostering creativity and collaboration.

However, the virtual format has limitations. It may lack the depth of face-to-face interactions and the cultural richness inherent in traditional approaches like machizukuri (Gibson et al., 2015, p. 408). Gamification's competitive elements, such as leaderboards, may also disrupt the consensus-driven and harmony-focused ethos central to machizukuri. This misalignment underscores the importance of adapting gamification to respect cultural and contextual sensitivities.

Conversely, machizukuri fosters strong community bonds through collaborative and participatory processes. Its reliance on face-to-face interactions builds trust and social capital, ensuring that development reflects local aspirations. However, this approach can be time-consuming and resource-intensive, limiting scalability and accessibility to diverse populations.

(2) Cultural considerations
Cultural context plays a pivotal role in the adoption and effectiveness of participatory planning methods.

In Japan, the collective decision-making and community involvement central to machizukuri align with cultural values of harmony and consensus. This cultural foundation enhances the approach's acceptance and success in Japanese communities (Sorensen, 2002, p. 78).

Globally, the Block by Block program benefits from Minecraft's widespread popularity and accessibility, transcending cultural barriers to engage diverse audiences. However, its success is contingent on technological infrastructure and community willingness to adopt digital tools. In areas with limited access to technology, the program's reach and inclusivity may be restricted.

(3) Future prospects

The potential to integrate gamification with traditional participatory methods like machizukuri offers an exciting opportunity to harness the strengths of both approaches. Hybrid models could combine the engagement and scalability of gamification with the trust-building and cultural sensitivity of face-to-face methods. For instance:

Visualization tools: Minecraft can be used during machizukuri workshops to model proposed designs collaboratively, allowing participants to see their ideas come to life.

Collective rewards: Gamified elements, such as badges and progress trackers, could emphasize collective achievements rather than individual competition, aligning with machizukuri's community-centric ethos.

Inclusive engagement: Hybrid approaches could use digital tools to engage younger, tech-savvy participants while maintaining traditional methods to include older or less tech-oriented individuals.

(4) Balancing gamification and harmony

One critical challenge is ensuring that gamification complements rather than disrupts machizukuri. Competitive features like leaderboards may inadvertently create divisions or hierarchies within communities, undermining the collective spirit of traditional planning methods. To mitigate this, planners and educators can adapt gamified elements to prioritize collaboration over competition. For example:

- Leaderboards could be replaced with collaborative progress dashboards highlighting group achievements.
- Challenges could be designed to foster consensus, encouraging participants to work together toward shared goals.
- Feedback mechanisms could reward collective effort, reinforcing the values of inclusivity and harmony.

(5) Leveraging emerging technologies

Emerging technologies like virtual reality (VR) and augmented reality (AR) offer additional opportunities to enhance hybrid models. VR and AR provide immersive experiences that can help participants better understand spatial relationships and design concepts, making them valuable tools for participatory urban planning (Bekele et al., 2018, p. 10). These technologies could complement both gamified and traditional methods, creating engaging, inclusive, and culturally sensitive planning processes.

(6) Implications for urban planning education

Integrating gamification and machizukuri principles in urban planning education can foster a more holistic understanding of participatory methods. By exposing learners to both approaches, educators can teach the importance of adaptability, cultural sensitivity, and the balance between innovation and tradition. This combined framework equips future planners with tools to engage diverse communities and address the complexities of modern urban challenges.

7. CONCLUSION

This study highlights the potential of combining innovative and traditional methods to engage communities, particularly young people, in urban planning education. The United Nations' Block by Block program and Japan's machizukuri approach both exemplify effective participatory planning practices, offering complementary strengths that can inform future urban development strategies.

The Block by Block program demonstrates the power of gamification to make urban planning more accessible and engaging. By leveraging Minecraft's interactive platform, it enables participants to visualize and experiment with spatial designs in a collaborative environment. This gamified approach is particularly effective for reaching younger, tech-savvy audiences and fostering creativity (Delaney, 2019; Pearson, 2019).

In contrast, machizukuri emphasizes face-to-face collaboration, consensus-building, and cultural sensitivity. Rooted in Japanese traditions of community involvement, it fosters strong bonds and ensures that local voices shape development processes. The approach builds trust and social capital, contributing to resilient and cohesive communities (Sorensen, 2002, p. 80).

The case for hybrid models

Integrating these approaches can harness their respective strengths to create a more inclusive and effective planning process. Digital tools like Minecraft can complement the in-person workshops of machizukuri, enabling broader engagement while preserving the collaborative spirit central to traditional methods. Gamification elements, such as badges and challenges, can be adapted to reward collective achievements rather than individual competition, aligning with machizukuri's harmony-focused ethos.

Emerging technologies, including virtual reality (VR) and augmented reality (AR), also hold promise for enhancing participatory planning. These tools offer immersive experiences that can deepen understanding and engagement, bridging the gap between digital innovation and cultural traditions (Bekele et al., 2018, p. 12).

Addressing challenges

To maximize the benefits of hybrid approaches, planners and educators must address key challenges:

- Equitable access: Ensuring access to digital tools and technology is critical to avoid exacerbating inequalities.
- Cultural sensitivity: Balancing gamification's competitive aspects with the collaborative values of traditional methods like machizukuri is essential.
- Scalability: Hybrid models must be designed to adapt to diverse contexts while retaining their core principles of inclusivity and collaboration.

Future research

Further studies should explore how hybrid approaches can be effectively implemented in different cultural and urban contexts. Research into the long-term impacts of combining gamification and traditional participatory methods on community development, engagement, and education is essential. Additionally, investigating the potential of emerging technologies, such as VR and AR, can provide new insights into enhancing urban planning practices.

Final thoughts

The integration of gamification and traditional participatory methods offers a promising path forward for urban planning education. By combining the strengths of Block by Block and machizukuri, planners, educators, and policymakers can create dynamic, inclusive, and culturally sensitive processes that reflect the diverse needs of communities. This hybrid approach provides valuable lessons for fostering sustainable, resilient, and livable cities, equipping future generations to address the complexities of urban development (Deterding et al., 2011, p. 12).

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