USING MINECRAFT FOR YOUTH PARTICIPATION IN URBAN DESIGN AND GOVERNANCE

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CONTENTS

INTRODUCTION

The purpose of this paper is to outline UN-Habitat's approach to using information and communication technology (ICT) as an enabler to encourage youth participation in urban design and governance

UN-Habitat believes that ICT can be a catalyst to improve governance in towns and cities and help increase levels of participation, efficiency and accountability in public urban policies, provided that the tools are appropriately used, accessible, inclusive and affordable. Research shows that ICT use by youth can have a direct impact on increasing civic engagement, giving them new avenues through which to become informed, shape opinions, get organized, collaborate and take action (Ben-Attar & Campbell, 2015). UN-Habitat's experiences of using the video game Minecraft as a community participation tool for public space design confirms this view and shows that providing youth with ICT tools can promote improved civic engagement.

Youth are at the center of the ICT revolution, both as drivers and consumers of technological innovation. They are almost twice as networked as the global population as a whole, with the ICT age gap more pronounced in least developed countries where young people are up to three times more likely to be online than the general population (Ben-Attar & Campbell, 2015). Recognizing this potential, UN-Habitat in 2012 started working with Mojang, the makers of the popular computer game Minecraft. Through the partnership with Mojang, Block by Block, UN-Habitat uses Minecraft to involve youth in the design of urban public spaces. In participatory design workshops, young people are brought together to visualize their ideas in Minecraft, and present these to city authorities and local government officials. UN-Habitat and local implementing partners then work with local governments to implement the ideas generated through the Minecraft process in real life.

BACKGROUND

Arguably, three of the most important changes currently facing the world are urbanization, digitization and the youth bulge

At the beginning of the 20th century, 10 per cent of the world's population lived in urban areas. By 2009, this had reached 50 per cent and by 2030 it is forecast to be 60 per cent, with the majority of the growth taking place in Africa and Asia. Twenty years ago, only 0.4 per cent of the world's population had access to the internet, a figure that had increased to 43 per cent, or 3.2 billion people, by 2015 (ITU, 2015). The population of the world is also young. In Africa, youth under the age of 24 account for 60 per cent of the population and in Latin America and Asia, around 40 per cent (United Nations Department of Social Affairs, 2015). Another important factor is the age of the urban population. Estimates indicate that by 2030 as many as 60 % of urban dwellers will be under the age of 18.

It is widely agreed that citizen participation is important for city governments to consider the needs, interests and knowledge of different stakeholders, something requiring collaborative design and participatory decision-making processes (von Heland et. al., 2015). However, often public policy making is not done through deliberation but through the technical expertise of public officials or focused on more powerful stakeholders (Adams, 2004). According to the OECD, governments need to direct special attention towards engaging hard to reach groups such as youth in these processes (OECD 1992). When some groups cannot influence agenda-setting and decision-making, or obtain relevant information to assess how well different policy alternatives serve their interests, they are more likely to be ill-served by new laws, policies and development plans (Fung 2006).

Community participation in urban planning can improve outcomes by bringing together people with different information, knowledge, skills and ideas, promote mutual learning, create a sense of ownership and commitment and increase support for implementation (Mahjabeen, et. al., 2006). Citizen involvement may also help produce policies with greater public acceptability and improve trust in government, while promoting the personal growth of participants (Yang and Pandey 2011). This is increasingly important due to the present trend towards increasing intra-urban inequality and stratification in many cities (UN-Habitat 2014).

But despite their growing number, youth are often excluded from participation in decision-making processes, leaving them socially and politically marginalized and frustrated (Chawla et al, 2005). Many governments and public bodies lack the necessary capacity, resources and tools to effectively engage youth in urban planning, design and governance processes. However, in recent years, a growing recognition is evident among policy makers and practitioners that youth are an important source for positive social change and technological innovation (Hart, 2002; Ragan, 2004). Now that awareness of the importance of youth participation has been raised regarding the "what" and "why" of youth participation, more work is now needed to address the "how." UN-Habitat's work with Minecraft, as a civic engagement tool with youth is one important model that addresses that question.

MINECRAFT FOR COMMUNITY PARTICIPATION

ICT is often considered to provide new opportunities to engage citizens and improve the quality of political deliberation and decision
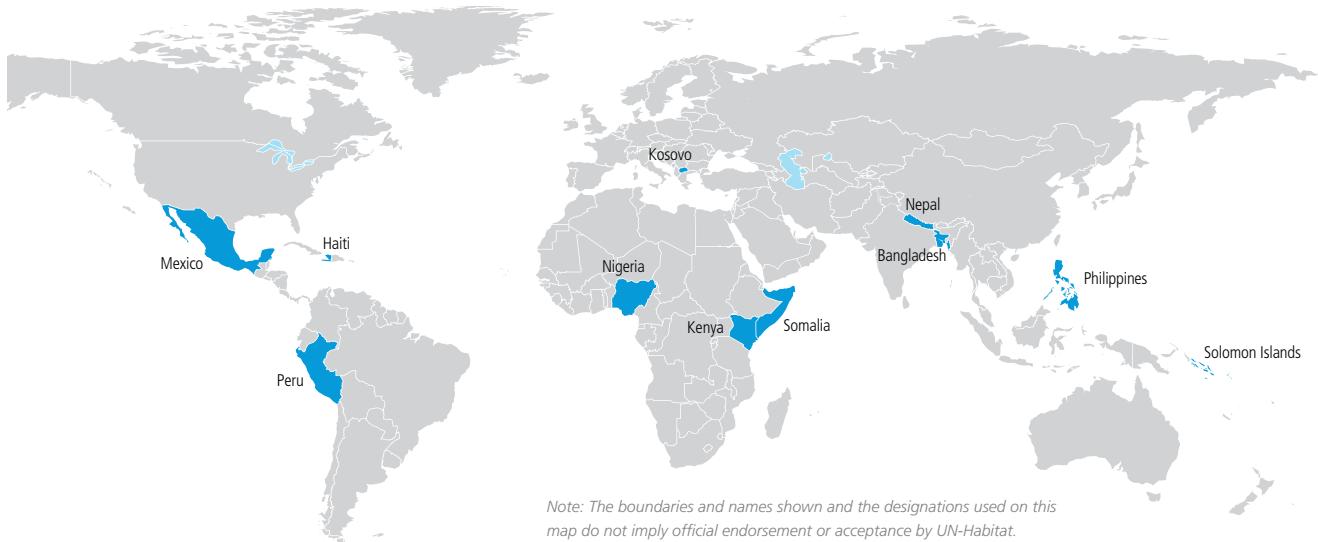
For example, ICT can be used to communicate technical information to enhance understanding, provide public access to information that was previously only available to experts and officials, to crowdsource information and feedback directly from citizens and make it publically available. (Von Heland, et. al., 2015). ICT is also useful for visualizing ideas, thus promoting shared understanding and facilitating interaction between citizen and government. For example crowdsourcing data can provide opportunities for urban "citizen observatories" in which citizens crowdsource urban information which can be useful for policy makers. However, ICT and citizen participation in urban planning and design is still a young field, and more research is needed to study its social impact.

As a way of engaging citizens, particularly young people in the design of urban public spaces, UN-Habitat in 2012 entered into a partnership with gaming company Mojang AB, the makers of the computer game Minecraft. Minecraft is one of the world's most popular computer games with over 100 million players worldwide. In Minecraft, players interact with the game world by placing various types of colored blocks – similar to a 'digital Lego' – in a three-dimensional environment with the purpose of building creative structures, such as buildings and cities. Minecraft can be played online on multiplayer servers, or in single player worlds, across multiple game modes. Creative mode enables gamers to easily create buildings similar to those produced by complex 3D modelling software, with the additional

A park in Lima, Peru, in Minecraft and real life

Minecraft projects around the world

Kosovo
Nepal
Mexico Haiti
Nigeria Bangladesh
Kenya Somalia Philippines
Peru Solomon Islands

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by UN-Habitat.

benefit of being able to collaborate through the multiplayer setting. As a result, the building process is more similar to real-life construction projects with multiple workers carrying out different roles simultaneously, than traditional digital 3D model-making tools with only one designer.

UN-Habitat began developing the methodology for Minecraft community participation in 2012, initially with the support of Byggtjanst, a company focused on social change and innovation owned by the Swedish construction sector. In 2011, Byggtjanst had piloted the use of Minecraft for youth participation in the redesign of low-cost housing areas with good results. However, this project, *Mina Kvarter*, ended in 2012 and Byggtjanst then advised UN-Habitat on how to start *Block by Block,* as the programme came to be known. After initial tests in Kenya and Nepal, the process has now been used in projects in Nigeria, Somalia, Kosovo, Peru,

Haiti, Mexico, Bangladesh, the Philippines and Solomon Islands.

Experiences from using Minecraft in this way show that the game increases youth's interest in urban design and planning, enables them to express themselves in a visual way, provides new ways to influence the policy agenda and helps youth develop skills and network with other people from the community. Designing in Minecraft allows youth to explore the merits of various design alternatives and visualize their ideas, providing a way to explore and question new perspectives. The deliberative process also encourages youth to develop a broader understanding of the urban environment, speak in public with greater confidence and improve social relations. For many participants, this is the first time they have publicly expressed opinions about public issues and many say that the Block by Block process makes it easier to communicate their interests and ideas.

METHODOLOGY

1. Based on images, plans, Google Maps and other available materials, a base Minecraft model of the public space is produced by UN-Habitat.

2. UN-Habitat arranges for a Minecraft expert to provide Minecraft training and support.

3. Community participation workshops are held with youth, project staff and partners in order to:

   ▉ Train participants in the basics of Minecraft modelling

   ▉ Facilitate a dialogue on issues regarding the public space

   ▉ Produce Minecraft models incorporating the proposed design ideas

   ▉ Collate the ideas that are included in the models

4. The participants are briefed and divided into groups of 2-4 people, with one computer provided for each group.

5. The participants are given sufficient time to develop their ideas in Minecraft. Depending on the level of prior IT and Minecraft knowledge, two to four days is recommended.

6. The participants present their Minecraft models to stakeholders – including urban professionals, policy makers, government officials and UN-Habitat staff. The designs are discussed through a deliberation process and final designs agreed among stakeholders.

7. The Minecraft proposals are used to feed into professional design work and budget processes.

CASE STUDIES

This section explains the development of the methodology through a series of case studies.

› Initial test of methodology in Kibera, Nairobi

The Undugu Sports Field is located in the Silanga area of Kibera, the largest slum in Kenya's capital Nairobi. Nestled between the Kibera villages of Silanga and Soweto and the Nairobi Dam, the field is one of few open spaces in Kibera and used for a range of sport, recreational, cultural and business activities. The aim of the public space project in Undugu was to provide a multi-purpose, inclusive and accessible public space to enhance urban safety, increase economic activity, provide recreational activities, engage children and youth through sports, improve quality of life, and in general strengthen the sense of ownership, responsibility and well-being within the Silanga community.


The Undugu Sports Field

UN-Habitat and partners initiated a comprehensive community engagement process to identify public space improvements. Based on community participation process, technical plans were produced for the construction work

In 2012, UN-Habitat and partners, including the Nairobi City County government, Undugu Society of Kenya, Kilimanjaro Initiative, Project for Public Spaces and Kounkuey Design Initiative, initiated a comprehensive community engagement process to identify public space improvements. Based on this community participation process, technical plans were produced for the construction work. Minecraft was tested as a way to communicate the

designs to the community at the conclusion of the participation process. With the assistance of Mojang, UN-Habitat identified FyreUK, a group of young expert Minecrafters in the United Kingdom to build a Minecraft model of the Undugu Fields. Based on images, plans and Google satellite view, FyreUK in a short time produced two models of the space – one as it currently is, and one with the design changes as suggested by the technical team.

Minecraft model of the Undugu Sports Field, built by FyreUK

In February 2013, the first workshop using Minecraft as a community engagement tool was held at the Soweto West Resource Centre in Kibera with around 30 participants from Silanga. It was very clear that using a three-dimensional model, rather than two-dimensional architectural drawings, to communicate the proposed plans, improved the level of understanding and engagement of the participants substantially. By navigating a three-dimensional world, the participants were able to express themselves in new ways, and previously sensitive issues, such as the size of the football pitch, which had produced several disagreements throughout the process, were resolved. Both participants and facilitators agreed that the Minecraft model had had a positive impact on the dialogue in the workshop and it was decided to test the approach further.
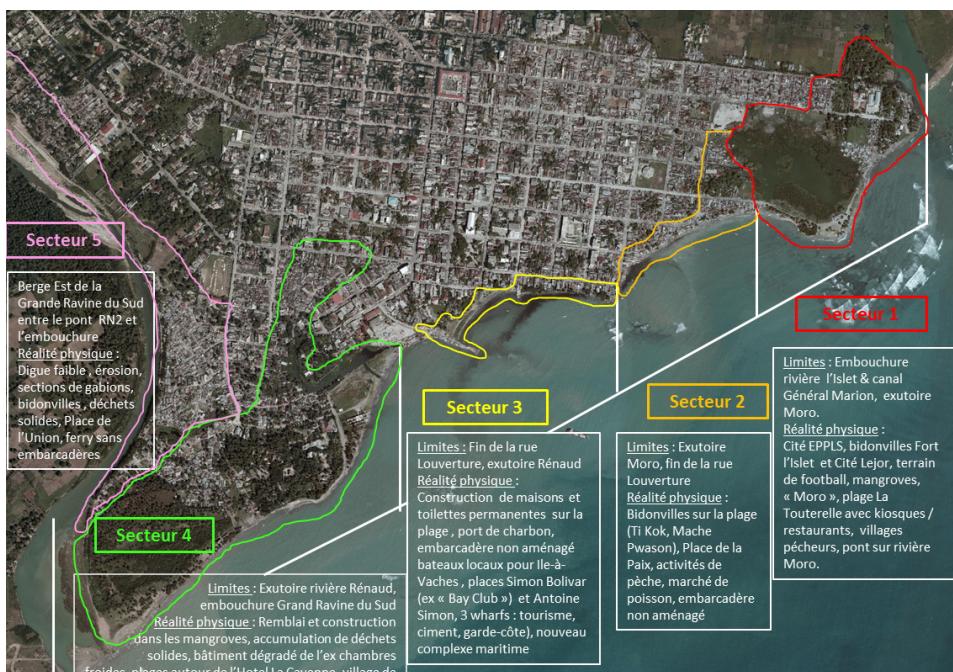

A participant in Kibera highlights the size of the football pitch in the Minecraft model

❯ Developing the process in Les Cayes, Haiti
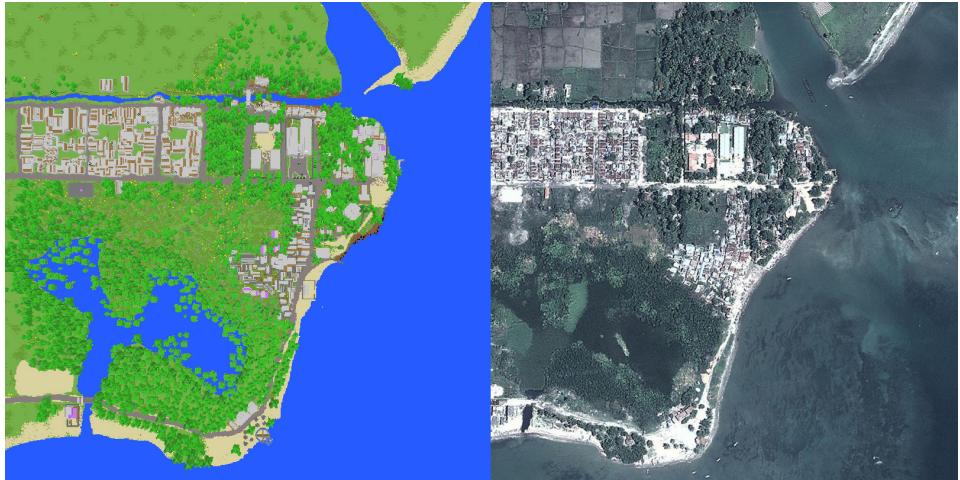
Les Cayes is a medium-size city in Southwestern Haiti, and host to one of the country's major ports. Originally a well-planned city, rapid urban growth in recent years has resulted in informal settlements being established between the planned city core and the sea. Due to soil erosion and lack of basic services in these areas, living conditions are unsanitary and citizens suffer from flooding, especially during stormy conditions. To improve the situation, UN-Habitat has been working with the Les Cayes city government and other partners to implement an urban waterfront project that will protect the city from flooding and erosion and provide public spaces for the citizens of Les Cayes. The project began in the Fort Islet slum in 2014.

Les Cayes, showing the Fort Islet slum in area number 1

> " *UN-Habitat has been working with the Les Cayes city government and other partners to implement an urban waterfront project that will protect the city from flooding and erosion and provide public spaces for the citizens of Les Cayes* "

Minecraft model of Fort Islet, Les Cayes, built by FyreUK

In March 2014, UN-Habitat tested a longer version of the Minecraft process in Les Cayes. Working with two young Minecraft gamers from Sweden, UN-Habitat designed a two-week community participation process. The project started off with a series of community meetings in the Fort Islet slum in order to recruit 20 participants. Following this, UN-Habitat held a three-day community engagement workshop which included representatives from the Les Cayes local authority, the Governor's office and other stakeholders in addition to the community participants. The participants were given Minecraft training, divided into four groups – older fishermen, teenage girls, older women and a group of younger men – and asked to use Minecraft to redesign an area of the Fort Islet waterfront that they were familiar with.

Port de pêche redesigned by fishermen in Minecraft

Throughout the following 10 days, the participants spent time in the UN-Habitat office redesigning their selected areas with the support of UN-Habitat staff and the Minecraft gamers. The results were positive – within a few hours all participants, even those with very limited previous computer knowledge, were able to start visualizing their ideas in Minecraft and within a few days concrete ideas were emerging. The fishermen, for example, wanted jetties to help them land their boats, shady places to clean fish, streetlights and public toilets. The group of teenage girls proposed walkways, sports facilities, kiosks and restaurants, street lighting and public toilets.

At the end of the process, the participants were given the opportunity to present their designs to representatives from the local authority, Governor's office and UN-Habitat. The Minecraft model of Plage de la Touterelle, designed by the group of teenage girls, was selected as the first area of intervention. Seeing teenage girls confidently presenting their ideas to a large group of politicians, policy makers and urban professionals, highlighted the potential of Minecraft to support deliberative processes. Taking part in these kinds of processes can help build youth confidence, promote critical thinking and improve public speaking skills, important for further civic engagement.

One of the girls presenting Minecraft designs to policy makers and urban professionals

❯ Crowdsourcing public space ideas with youth at Aldea Digital, Mexico City

A participant at Aldea Digital redsesigning Plaza Tlaxcoaque in Minecraft

In April 2014, UN-Habitat used Minecraft to run a public space crowdsourcing exercise at Aldea Digital, the world's largest digital inclusion festival, in Mexico City. In partnership with Telmex and Laboratorio Para la Ciudad, UN-Habitat designed a competition in which youth attending the festival were asked to redesign Plaza Tlaxcoaque, a square in the historic centre of Mexico City, taking into consideration three themes – safety and security, sociability and playfulness and games for kids. With the support of student volunteers and Minecraft gamers from Minecraft Mexico, the largest Minecraft community in Latin America, the competition ran for a period of two weeks. FyreUK built a Minecraft model of Plaza Tlaxcoaque and used a Minecraft plugin called PlotMe to set up

thousands of identical versions – "plots" – of the square on a public server. The UN-Habitat team then allocated a plot to each participant, briefed them and gave them three hours to complete the challenge. A public link made it possible to follow the building process live online on the server.

The result was overwhelming – 7,429 young people took part, 1,438 submitted ideas and 431 completed projects. The experience again highlighted the power of Minecraft as a visualization tool promoting critical thinking and strong interest in urban design. The young people visualized a wide range of urban design features, including outdoor museums, libraries, roller coasters, boat rides, urban gardens and footbridges. For example, the winning

entry, submitted by 12 year old Samantha Monroy Sanchez, included a petting zoo, roller coasters, urban gardening, a medical centre, fountains and outdoor games.

The level of creativity was impressive and in addition to physical structures proposals often also considered 'softer' issues, for example pony rides, concerts and exhibitions, confirming that activities organized in public urban spaces are just as important as the physical design. Observing thousands of young people building in Minecraft, it becomes clear that the design and visualization process helps bring in new perspectives, enabling participants to explore and develop their ideas, beyond what would be possible without the game. This provides an opportunity to work creatively with design and problem solving, for example by testing ideas and then quickly changing them.

The winning entry submitted by Samantha Monroy Sanchez, age 12

❯ Evaluation of the Minecraft process in Kirtipur, Nepal

Youth in Kirtipur designing a public park in Minecraft

Kirtipur is an ancient city in the Kathmandu Valley, approximately 5 km south-west of Nepal's capital Kathmandu. UN-Habitat is working with Kirtipur Municipality, Center for Integrated Urban Development (a local NGO) and local communities to conserve and upgrade existing public spaces for better community utilization. In Nepal, public spaces play an important role in many cultural activities and for maintaining community resilience as well as for recreation. Public water bodies occupy a central position in many public spaces and are important resources for women who are often responsible for water-related household activities. However, the existence and quality of public space in Kirtipur is rapidly decreasing because of unplanned urbanization and lack of management, and several of the public water bodies are in poor condition.

In February 2015, UN-Habitat and Center for Integrated Urban Development organized a four-day Minecraft design workshop to involve youth in the design of a park in Kirtipur. In total, 37 youth – 26 male and 11 female – participated in ten groups, with each group having three to four members. During the first two days of the workshop youth designed in Minecraft and on the last day the design proposals were presented for a broader audience of inhabitants, community leaders, officials and experts. Before developing their

designs, youth were given presentations about the importance of public space, participatory decision making and the Minecraft tool.

After the conclusion of the Minecraft workshop, an evaluation was carried out by Fanny Von Heland from Ericsson Sustainability Research, in partnership with UN-Habitat (Von Heland, et al., 2015). The study was based on data collected through qualitative interviewing and a smaller questionnaire in Kirtipur and Kathmandu in April 2015. In total, 23 interviews were conducted with people who had participated in the Minecraft workshop, 16 male and 7 female. Seven of the interviewees were representatives of other groups than youth, including NGOs, municipality and community leaders. A group interview with four women involved in the public space revitalization project was also conducted.

Previously, there had been few initiatives in which youth were encouraged to take part in urban design and planning experts and local officials perceived Minecraft as a useful way of bridging the gap to youth. They also valued Minecraft for complementing the professional work of engineers and architects. For most of the youth, working with Minecraft was the first time they expressed views in public and there was agreement among the participants that Minecraft made it much easier to start a dialogue about the public space. Many participants also felt that designing in Minecraft helped to generate new thinking and learning. Many had joined the workshop initially because of their interest in gaming, but learning about urban design was described as a positive and unexpected side effect. (Von Heland, et. al., 2015).
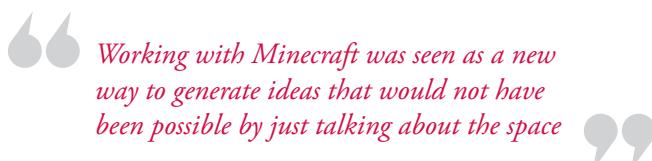
A proposed redesign of the park

Working with Minecraft was seen as a new way to generate ideas that would not have been possible by just talking about the space, for example by trying out ideas and then quickly changing them, enabling participants to experiment with different ideas. A common remark was that visualization was crucial to start the discussion around the public space. As many youth had little previous experience of speaking in public they also felt that Minecraft was a social mobilizer with potential to catalyze awareness about youth interests. For example, one participant said, "Minecraft became like a bridge between thought and reality". (Von Heland, et. al., 2015). The participants valued Minecraft for enabling them to communicate interests and new ideas, while at the same time increasing engagement and ownership of the design process. For many of the participants, the final presentation was their first time to speak in front of a large audience and few had previous experience of participating in public meetings. Importantly, many participants said that designing in Minecraft their self-confidence and communication skills improved and many youth felt proud over their personal achievement and contribution to the project (Von Heland, et. al., 2015).

In terms of gender, many male workshop participants emphasized that Minecraft helped to increase knowledge about women-specific problems, for example related to public water bodies. Representatives from the municipality also saw Minecraft as a possible means of introducing youth to new gender roles to encourage greater gender equality. Many female workshop participants also expressed that Minecraft had increased their interest in technology and that they now would like to explore how to make better use of technology for both leisure and skills development.

However, a substantial number of youth expressed that learning would improve with broader community participation and more time for dialogue. The opportunity to work creatively with design and problem solving while building in Minecraft was believed to generate ideas that could not be born out of just talking about public space. There were also concerns raised regarding differences in women's and men's previous computer skills, influencing the process dynamic and outcomes.

Working with Minecraft was seen as a new way to generate ideas that would not have been possible by just talking about the space

Conclusion

UN-Habitat and partners have been developing the methodology of using Minecraft for community participation since 2013. Observations from 15 projects in 12 countries together with the formal study of the process in Kirtipur, Nepal, indicate that using technology as a tool for participatory urban planning and design can be a powerful way to include non-traditionally stakeholders in decision-making processes. The lessons and experiences from using Minecraft and the Block by Block projects indicates clearly how this can also have a strong effect on young women and girls' participation. The game has the potential to increase youth's interest and engagement in urban planning and design, promote creativity, innovation and visual learning, help encourage dialogue between different groups and opinions and contribute to the development of important skills such as collaboration, public speaking and negotiation as well as giving young women a more powerful voice. Minecraft provides a platform to explore the merit of different design alternatives and visualize ideas, potentially resulting in better design and ownership by the local community and users during the final implementation.

It is nevertheless important to consider issues such as gender when using Minecraft as a participation tool. Differences in digital skills linked to gender can have a significant impact on group dynamics and participants' ability to participate in the design and visualization process. Often women and girls have fewer opportunities for learning about and using ICT because of deeply entrenched gender roles. There is therefore a risk that using ICT as participation tools favours the easily recruited men over women and girls. Thus, there is a need to consider how power dynamics associated with, for example, gender and digital knowledge influence how women and men can participate in design and decision making. Without such consideration the use of ICT risks reproducing or even strengthening the position of more powerful groups.

However, as this paper has shown, the use of ICT presents clear opportunities for governments – on local, regional and national level – to engage youth in participatory processes. Games, such as Minecraft, offer a clear possibility of engaging with youth on their own terms and presents new ways of involving them in political deliberation. Visualization is crucial in how people perceive reality and Minecraft is therefore useful for agreeing joint policy positions and solutions. This is particularly important in participatory processes necessary for collaborative urban design, as there is a need for participants to establish common meanings. Minecraft also presents opportunities for the participants to develop action-oriented and intrinsic skills, resulting in a stronger sense of personal fulfilment, heightened self-worth or stronger identification with their communities. Taking part in the process encourages youth to develop a better understanding of the surrounding environment, speaking in public with greater confidence and build new social networks, while at the same time cultivating skills such as eloquence and imagination. Mastering such skills is necessary for individuals to engage in critical thinking and contribute to social and political change, thus having a positive impact on community cohesion and further civic engagement.

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Using Minecraft for Youth Participation in Urban Design and Governance

This publication provides an overview of UN-Habitat's use of the popular computer game Minecraft for community participation. Experience from projects across the world show that Minecraft is a useful tool for engaging communities, particularly young people, in urban planning processes. The publication outlines UN-Habitat's Minecraft methodology and describes projects in Kenya, Haiti, Mexico and Nepal.

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