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Article

Engaging Youth in Urban Planning Discussions Using Minecraft: Challenges and Opportunities

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Abstract

This study explores the potential of *Minecraft* as a game-based platform to engage youth, and particularly NEET youth, in urban planning discussions.
Methodology: An exploratory qualitative case study was done in collaboration with a Swedish municipality, using observations of modded Minecraft play sessions, interviews, and ethnographic data from an internship program.
Findings: Our data collection led us to identify four themes: (i) *Minecraft Enables*, the game supports visualization of planning ideas; (Ii) *Minecraft Skills Enable*, familiarity with the game facilitates participation; (iii) *Preferences and Norms*, personal ideals shape design choices; and (iv) *Understanding Needs*, limited awareness of urban functions constrains meaningful engagement.
Originality: Unlike prior studies focusing on children or general youth, this research examines NEET youth as a hard-to-reach group and positions *Minecraft* as a boundary object for participatory planning rather than a formal planning tool.
Contribution: This study contributes insight into the use of *Minecraft* in participatory planning with NEET youth, a rarely studied group in serious games literature and game-based approaches.

1. Introduction

Encouraging youth (individuals aged from 15 to 24 years [1]) to actively participate in discussions about municipal affairs can be a challenge. Often, there is a sense of disconnection or apathy among youth towards local governance issues [2], [3]. This disconnection could arise from various factors, such as a lack of awareness, perceived irrelevance of municipal decisions to their lives, or limited opportunities for their voices to be heard within traditional governance structures. The public sector in general, and municipalities specifically, have identified a particular challenge in reaching out and engaging young people who are "Not in Education, Employment, or Training" (NEET). NEET youth is understood to be of special interest to decision makers primarily due to their status of not being enrolled in the educational system

nor on the labour market [4], [5], [6]. These conditions differentiate them from other youth, as their disengagement from institutional pathways reduces opportunities to develop the knowledge and confidence needed to navigate urban spaces and act on issues [4]. Research has already discussed NEET youth experiences and constrains they face in their political agency and capacity to influence local decision-making [5], [6], which bears relevance in the context of spatial planning since decisions about urban environment shape access to services, mobility, and social opportunities. Areas that directly affect NEET youth, yet rarely include their voices.

In 2010 NEET youth was recognised as a priority target by the European Commission's Employment Committee to facilitate inter-state monitoring of this vulnerable group [4]. In 2020, the average proportion of youths identified as NEET in Europe was 16.5%, with the highest rates in Italy (28.9%) and Greece (26.8%), and the lowest in Luxembourg, the Netherlands, and Sweden [7]. Despite Sweden having one of the lowest NEET rates in the European Union, according to the Swedish Agency for Youth and Civil Society (MUCF), 140,000 youths in Sweden were not in employment, education, or training in 2020. These individuals are considered at risk of long-term unemployment, financial vulnerability, and disengagement from society [8]. Many lack awareness of the support available to help them resume their studies, or strengthen their position and enter the labour market [9]. Although NEET individuals are a heterogeneous group with diverse life circumstances, studies highlight several risk factors at the individual, family, and community level increasing their likelihood of social exclusion. It is suggested that targeted interventions are needed [8]. In response, authorities have begun working actively and preventively to address the complex needs of young people before too much time has passed. However, municipalities and other authorities have noted a lack of effective tools for reaching out to young people who do not engage with official information channels. Conventional participatory approaches to *planning* often rely on institutional settings such as schools, youth centres, or youth councils, which NEET youth usually do not access.

To address this gap, we explored the potential of Minecraft, a widely used sandbox game with strong creative elements, as an *engagement platform* that can visualize planning ideas and facilitate dialogue between youth and experts in planning. Specifically, our study asks: *What opportunities and challenges arise when using Minecraft as a game-based approach to engage NEET youth in urban planning discussions and facilitate dialogue with municipal actors?*

1.1 Game-based approach as a way to engage youth on questions of urban governance and planning

For this research, we draw on ideas about participatory governance theory, on literature on youth engagement and digital tools in planning. We focus on how game-based platforms can act as boundary objects in bridging youth perspectives and municipal planning processes. In this, we are particularly interested to consider NEET youth as young people who are often excluded from conventional participatory channels. We use key ideas from those bodies of literature in the analysis of empirical data collected through our collaboration with a Swedish municipality, highlighting both the opportunities and limitations of using Minecraft as an engagement tool in this context.

1.2 Challenges in engaging youth in urban governance and planning

As democratic governance requires the involvement of those being governed in decision-making and community planning [10], one of the threats to the public sector is the lack of civic engagement. Berglöf and Asplund [11], in their study of Swedish municipalities, state that a feeling of powerlessness and a lack of knowledge contribute to youths not seeking support or taking part in community life. As a solution to this, an outstretched hand and contact with authorities are promoted. To be able to establish this kind of contact, an active effort is needed

in arenas where youths are situated. However, research also shows that outreach activities in places where people meet (e.g., the municipality's meeting places for youths or cultural and sports events) rarely reach those most in need.

In spatial planning and urban governance, the same problem of reaching out to youths is identified [12], [13]. Serious games have been described as providing a valuable practical tool [14] that can help to approach and engage people [14]. For the last decades, there have been steps towards a more inclusive planning practice [2], [15], [16]. Planners are struggling with a similar task of engaging children and youths in participatory processes [2], [17], [18], as the municipalities do with engaging youths identified as being of NEET status.

1.3 The potential of game-based approaches in engaging youth

Literature discusses the potential of engaging youths in municipality affairs with game-based approaches [19], [20]. A significant portion of youths play computer games [19] and are computer literate [20]. Computer games have been used to involve youths in several different public sector projects and to give a voice to youths in municipal processes [21], [22]. In the last decades, special attention has also been given to youths not in education or employment by policymakers, and several intervention initiatives [4], [8], including computer games interventions [18], [23], [24], have been introduced.

As established in prior research, games have proven to be effective tools for delving into challenging and sensitive topics reflectively [24], [25], [26], [27]; the engagement of NEET by using games is explored in the present study. Various technology adaptation models [28] connect the adaptation of technology to the perceived ease of use and perceived utility of the use of a game. While games, such as *Minecraft,* can address aspects related to the ease of use since youth are already rather good with games, computer games might not be sufficient in resolving the perceived utility issues. The utility of participating in municipality-led processes might also not be clear at all times to adults. We use the word games to denote products that are sold or distributed as games. Whether some of these are games, or what a game is (cf. various definitions of games in [29]), is beyond the scope of this study.

Different games have been used in spatial planning processes (see [14], [30] for recent reviews of serious gaming in urban planning); for example, *Sim City* (1989), *Cities Skyline* (2015), and *Minecraft* (2009) have been used in various ways in urban planning-related teaching [31]. Robinson et al. [31] argue that *Sim City* "seems particularly well-suited for geography education because its environments can enhance students' geographic understanding, develop their critical thinking skills, and facilitate the development of geographic creativity by offering them autonomy to construct their cities and thereby stimulating interest". Others have used *Minecraft* (2011), most likely because it offers more flexible frameworks, for example, via mods (user-created game extensions that change how the game behaves) and its educational version of the game's urban planning experiment [32]. *Cities: Skylines* is used in urban planning education due to its traffic simulation capabilities [33]. *Minecraft* has been used, among others, to engage children in a city planning study in Brazil to bring forth children's values [32]. In a study conducted in Denmark, children redesigned deprived neighbourhoods using *Minecraft* (and *Lego* pieces as building material): "Overall the study showed that tasks focused on solving local living problems through neighbourhood redesign were strongly motivational for students" [34], while in Sweden it has been used with teenage girls [24]. Also, in previous projects, for example, the *UN Habitat Block by Block* programme [35], there have been inspiring initiatives on the use of *Minecraft* to make community members redesign their neighbourhoods and change their public spaces within the game, according to their needs and desires. *Block by Block* is an organisation described as allowing *Minecraft* players to turn neglected urban spaces into vibrant places that improve the quality of life for residents. According to the programme, both resources and tools are used to ensure that the community members' input is reflected throughout the processes,

influencing the planners, and making sure that the input provided by the community members is acted on.

Minecraft is not a serious game designed for policy-making, governance, or civic engagement. Rather, it is a commercial entertainment game. This study uses *Minecraft* precisely because it allows us to examine whether an existing, widely accessible entertainment game, when adapted for non-entertainment purposes, can meaningfully support processes related to urban governance. In this sense, Minecraft functions as a testbed. This study considers how adaptable entertainment games may anticipate, or inform, the potential of purpose-built serious games in similar contexts.

2. Methods and Material

This is a qualitative and explorative inquiry, where we use a case study methodology [36] to study how *Minecraft* can be used in urban planning to engage NEET youth. The qualitative case study methodology was regarded as best suited to our research objective, given that it allows for in-depth exploration of the unique experiences that NEET youth in Sweden have, providing rich, context-specific insights into the potential of serious games for urban planning and governance [37]. For an in-depth exploration of this phenomenon, we have chosen a variety of data collection methods [38], [39]. Specifically, we have used i) playtesting modded *Minecraft*, ii) observation of playing/using *Minecraft* with urban planning tasks, and iii) contextual inquiry interviews and semi-structured interviews with the participants.

2.1 A novel internship program on games and cities

As part of the project, we collaborated with a Swedish municipality to set up an internship program focused on using games with NEET youth to address questions related to spatial planning and urban governance. The municipality announced an open call targeting NEET youth in that municipality. They then selected and appointed a group of four young adults and followed them closely for the whole period (Table 1). Two of the interns later left the program, dropping out before the internship period was over. The four youths were employed by the municipality on a 2.5-month internship program. They received monetary compensation for their time and a final certificate of attendance and completion of the program. The internship facilitated these youths to collaborate with researchers on the design and delivery of a game-and-planning-centred activity. The purpose of the internship was to support NEET youth with skill acquisition, provide familiarisation with a professional context, and enable them to learn about time management and group work. Our role was that of researchers exploring the potential of serious games within that policy area. Two municipal civil servants and social workers were assigned to the group; they held responsible for the overall internship programme, and had dedicated one-on-one mentorship sessions and consultations several days each week with the participating interns.

These interns were trained on game-related topics by our project team and were supervised and mentored by social workers and other professionals from the municipality. Their assignments on the internship included testing the *Minecraft* mod, setting up test sessions with other young adults (local residents), and performing other administrative tasks (e.g., meetings, data mining, workshopping). The data from the ethnography of the internship consists of participatory observation, field notes, recordings, screenshots of the built environments in *Minecraft*, and reflective notes taken by the interns during meetings. In this study, we also report on the data gathered during game testing sessions run by the interns, as well as interviews, observational data, and data drawn from the modded *Minecraft* sessions and the session plan, which will be described in further detail below.

2.2 Participants

Table 1 below provides details on the study participants and what kind of data were collected.

Table 1. Participants in the study

Participant	Ethnography of the Internship	In-depth interviews on *Minecraft* in urban planning	Interviews and observations on play sessions
P1: 19-year-old male, NEET	X	X	
P2: 19year-old male, NEET	X	X	
P3: 19-year-old male, student, working part-time			X
P4: 19-year-old male, NEET (not part of the internship programme)			X
P5: 20-year-old male, a student at the university			X
P6: 19-year-old non-binary, NEET	X (Dropped out)		
P7: 18-year-old male, NEET	X (Dropped out)		

2.3 Observation of the play sessions and interviews

In addition to the ethnographic data, part of the data is the planning and playing of *Minecraft* in the context of urban and spatial planning, with the focus on how planners could discuss with youth about their views, preferences, and needs with the help of the Minecraft environment. This consists of three different data sets: the modded *Minecraft* itself, playing and planning sessions, and interviews both with play-testers and with the interns about the experience of using *Minecraft* as a tool in planning in the local municipal community setting.

Minecraft (version 1.19) was played in creative mode with extensions adding schematics. Schematics are blueprints for buildings, etc., which can then be instantiated from the menu. This allows for the creation of an apartment building from a schematic much more quickly than creating that same building using *Minecraft* primitives. Players can also add new schematics to the system. All participants were given the same *Minecraft* map that was loosely based on the local municipality with some developed areas, including train and road connections, and some undeveloped areas. There was an undeveloped area that was pointed out to the participants as an area for expanding the town. However, the role of Minecraft was to see what the participants would do within the task we gave and form a basis for interviews.

The use of Minecraft in this study is motivated both by its familiarity among young people and by its extensive modding and customization capabilities, which allow researchers to modify game mechanics, environments, and rules to serve the study's objectives. Through modding, the game was adapted to represent urban structures and to enable rapid exploration of how environments change when developed in specific ways. This allowed participants to

engage with and experience alternative urban configurations and to articulate their views in more concrete terms. This approach treats Minecraft as a flexible platform rather than a serious game in its own right, illustrating how entertainment games with strong modding ecosystems can serve as an accessible first step for institutions and domain experts interested in experimenting with serious-game-like interventions.

Participants P3, P4, and P5 acted as players and planners in play sessions. The sessions were designed as one-hour individual test sessions, including a play session and a debriefing interview. The playing element consisted of a session where the participants were given the following scenario by the interns:

Imagine that you get the opportunity to build a completely new residential area where you would really like to live, spend time, and enjoy yourself. This area must be safe and contain a park suitable for the age groups, children 2-10, youths 14-19 and seniors around 65-90.

After being introduced to the scenario, the participants are then introduced to the *Minecraft* mod and its basics, followed by a play session where they address the challenge given. After the play session, the participant is asked some questions based on their experience of the game test by the interns holding the play session. The questions that the interns asked were: Were the instructions clear? Were you able to complete the workshop without any problems? How was the task? Was it too easy or too difficult to complete in the time specified? What are your own opinions on *Minecraft* and urban planning games? Do you have any criticism regarding how the workshop was handled and executed? What could be improved? Have you learned anything new? How can you use *Minecraft* in urban planning processes?

Initially, the interns did two sessions to test the set-up for the game testing, and after these, the results were evaluated, and the set-up was changed to streamline the session. After these initial tests, the interns performed the game test as outlined. In total, three play sessions were performed with three 19-year-old males. Each session was 40-60 minutes in total. The sessions were recorded by audio and video, and screencasts of the games on the computer screen were captured from each session.

To highlight the perspectives of engagement and possibilities of the use of games for spatial planning among youth identified as NEET, we also draw on data from semi-structured interviews and participant observations with the involved interns. We arranged two in-depth interviews (with the participants P1, P2), lasting for 30-40 minutes, to receive input from the participating interns on the processes of working with *Minecraft* for planning. In this study, the data consist of recordings of these interviews, as well as recordings of participant observations of workshops and game sessions arranged by the participating interns. The interview data provide access to the participants' perspectives and concerns, while the data from the participant observations provide insights into the arrangement and outline of involving youths in planning processes through the use of games. The interviews focused on questions related to what the participants had done in *Minecraft,* working with the mod, their experiences of using *Minecraft* to develop ideas, problems that occurred, and their experiences of working with *Minecraft* as a tool for urban and spatial plan visualisation and experimentation.

2.4 Data analysis

Drawing on the data from the ethnographic study, participant observations of the game testing sessions, recordings of the playing sessions, interviews, the *Minecraft* mod, and session plan, the analysis of the material is based on inductive thematic analysis [40], focusing on how the participants address issues related to planning and their living environment; how the participants planned, and the reasons behind their decisions. We conducted inductive coding of the data. Initial codes emerged from interview data and were revised when we analysed the game session observations and ethnographic data. The theme map (Figure 1) illustrates how

codes were combined to form themes. As the thematic analysis allowed us to extract rich, contextually embedded information from the data, we reviewed and refined the themes based on the ethnographic data, helping us to make sense of the narrative and meaning of the whole data set, and ending with four themes related to the understanding of needs, preferences and norms, what *Minecraft* in itself enables, and what skills *Minecraft* enables. In the results section, we present quotes from the interviews and play-testing sessions; all quotes are translated from Swedish to English using a word-by-word praxis.

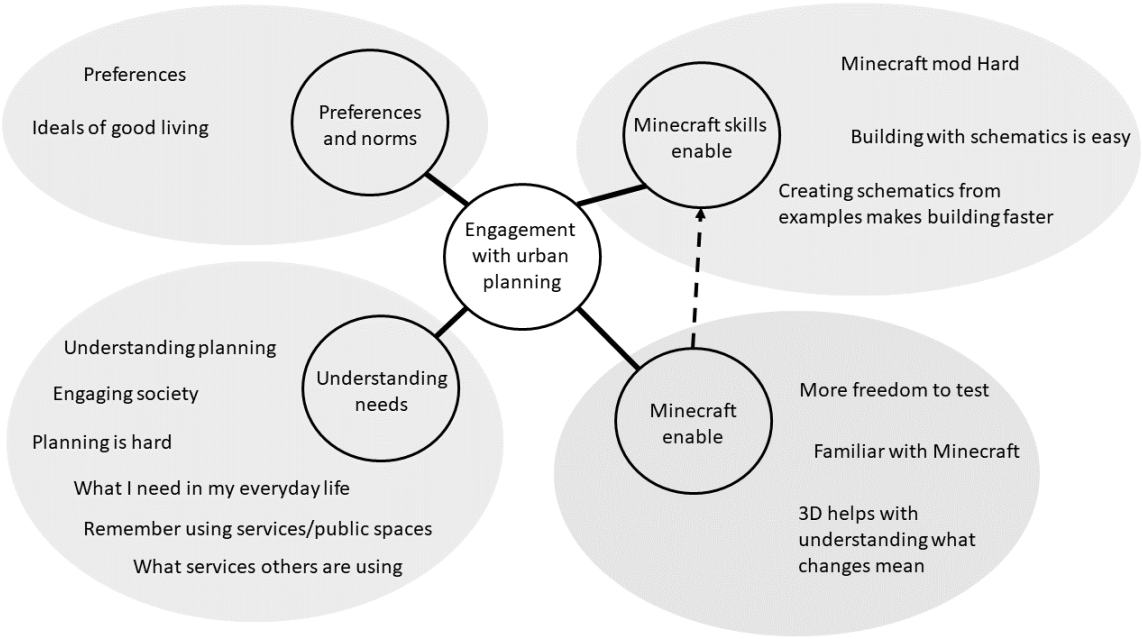

Figure 1. Map of the themes drawn from the thematic analysis.

2.5 Limitations

This study has the following limitations. The small sample size means findings are not generalizable to all youth or NEET youth; in fact, our aim is to provide conceptual insights and ideas about the topic of using game-based approaches in planning. Second, our evaluation relied on participants' perceptions, which does not allow us to see more objectively into social inclusion outcomes. Third, all participants were familiar with Minecraft, so results may differ for those with different gaming backgrounds. Fourth, we did not apply a formal serious game design framework, but instead, we explored Minecraft's potential as an engagement tool. Also, the internship and play sessions were short-term and long-term engagement effects were not assessed.

2.6 Ethics

The data handling follows the ethical guidelines formulated by the *Ethics Review Guideline for Social Science Research* [37] and the Swedish Research Council [41]. All participants were adults, and the focus of the study was on the use of *Minecraft* in urban planning and not on sensitive issues connected to the youths' private situations. As the study did not handle any medical information of participants, and as the youth interns were categorised as NEET by the municipality, and this was not connected to any other aspects of their living conditions, based on our university guidelines and law at the time of data collection, no ethical review was required. All information about the study participants is anonymised. The participants provided written consent to participate, and they were informed that they could withdraw from the study at any time. The original data has been stored safely on an external hard drive, locked in at the

university. The transcription of the recorded data has also been anonymised, and the transcripts are used for analysis. The municipality involved is not disclosed, and the municipality's initiatives are described in these vague formulations to protect the identity of the participants. All aspects concerning the interns' situation were handled by the municipality's civil servants, who were part of the whole research procedure and handled all aspects of the internship.

3. Results

3.1 Theme: Minecraft enables

The participants in this study felt that productivity was high when they could use schematics to instantiate things in the game world. P1 also created schematics for things he planned to reuse. Notably, the speed of building things slowed down as soon as no suitable schematics existed, and participants started to build things using *Minecraft's* native building tools.

It's good because you can kind of do things and get an idea of how it could be, but if it's too much imagination, it can be too much [...] it's both good and bad [...] it's bad if you have too much imagination and if there are too many things to do. (P4)

The schematics offered all play-testers an efficient way to build things in *Minecraft*. However, it was easy and fast to build buildings and things that have schematics. The *Minecraft* base building tools proved to be versatile in the hands of all participants when doing things our schematics did not support, but when participants had to use the base tools, it took much more time to get things built.

3.2 Theme: Minecraft skills enable

All participants in the study had vast experience in playing *Minecraft*. The two interns (P1, P2) both describe that they have grown up with games and that gaming has been a part of their daily lives since they were small. Also, the participants in the game test sessions describe themselves as being experienced players of computer games, specifically *Minecraft*. One of the interns (P2) described this experience as follows:

I've been playing Minecraft for so long I've beaten the game five or six times, then it's like this, yeah, but now you've beaten the game or killed the end-dragon or something then it's like this, what I build I built most of it with survivor, I have built most of it in creative it's like this, in the end, one's ideas disappear so I said I'm done with this game but of course, I've played with friends after that because it's like this it's easier to play with someone than by yourself so then it's like this, we have nothing to play but are we going to play Minecraft but yes we play Minecraft like then we like to build houses, we build villas, we build villages, but it's easier when you build together with someone, like one or two people, and it's as if your ideas come together so someone says but build this I'll build this, like, then all of a sudden so you have built something. (P2)

Starting at the age of 10 or even earlier, the participants have long experience with the game as a tool, even if how they have played it and for what purposes varies. P2, for example, mentioned in the interview the difference between playing *Minecraft* on a console and playing it on a computer.

I grew up with Xbox and PS4, I am not experienced with computers, so learning how to play with the controls on a computer was the hard part … but when I eventually got into it, it was a piece of cake. (P2)

While P1 expresses how his experience of playing the game has had a focus other than building:

> *[...] so I never used to when I played Minecraft, I never used to build that much. I used to play the game as it was kind of built with my resources, and I think it's more fun when it feels like you're fighting for it then, but I'm not the best at building so I didn't think it was that much fun. (P1)*

Even if the participants express having vast experience of playing the game, their comments also indicate that familiarity is important, and that what is known to them is what they can relate to, which also came up in the play sessions:

Minecraft is a very simple tool that most people have some kind of familiarity with, like, you recognise yourself and it's a very simple tool that people can use, simple, erm like this, it's stupid to take pliers that are inside out and outside in and made for people who have three fingers, it's kind of better to take something that's adapted to what people recognise and then it's just that *Minecraft* makes everything so simplified and it's easier to use when you have a frame, at least in my opinion. You frame yourself then you can much more easily frame yourself, but it's much easier to have a frame than here you have, do something, then you have to do something [...] to attract young people into urban planning at all, it's good to have something that young people do and start with that. (P5)

During the internship, the participating interns often returned to their experience of playing *Minecraft*, and how these skills were important for them and their relationship to gaming. P1, P2, and P4 state that they have played *Minecraft* a lot. They required no help with basic *Minecraft* controls and only required a brief explanation of how to use schematics. They jumped to use base *Minecraft* tools without hesitation if schematics did not offer options to build what they wanted to build. Other play-testers were not as proficient as P1, P2, and P4, and needed a little more help but could still build things without any major difficulties.

3.3 Theme: Preferences and norms

Some participants also created designs from their personal preferences, "I like public art pieces" (P5), as a reason to build a piece of art for the game environment. The ideals of good living also showed up in designs: "a luxury house that I built, just put it somewhere in [the city is anonymised] just like that with a pool and everything" (P2). The participant came up with the idea that luxury is needed, though he had lived in apartments his whole life. During the in-depth interview, he also referred to why he chose to build this, "that's kind of my own dream, or what's it called, the plot is so big, so I thought a little more in the future if you're going to have children or something like that, then yes" (P2). This shows that the participant has taken a future perspective, relating his choices of what to build in *Minecraft* with how he thinks he would like it to be in the future. What kind of environment could be appreciated in a future family life, thus moving away from his preferences and needs as a younger citizen?

A normative understanding of what it means to be a youth was referred to during the play-test and interview sessions. Youths are referred to as a rather homogenous group with specific preferences, such as needs for football fields, parks, and places where they can hang out. In one of the interviews, one participant referred to youth as a problem and a group that finds it hard to get involved in society, basically because youths mainly hang around in the city with no real intentions. "What youths do is basically just sit around and dope in travel centres, and that's what we're going to try to get them not to do, it's from my personal experience, but I don't think many people could have missed that thing" (P5). In this comment, the participant also refers to this as being common knowledge, demonstrating a normative understanding of what youths do.

In what follows, the participant, during the play-test, explains why it is hard to build environments where youths are encouraged to be in the same places as other citizens, in this case, parents and kids.

... what I would like is like this, is that if I were a teenager, I would like a basketball hoop, but with a real height like this and not a child's height like this, but the question is if you should have teenagers this close to toddlers, you talk about things they shouldn't hear. (P5)

In this quote, the participants bring up the dilemma of mixing youths with others; they refer to their preferences, and also start to build a basketball hoop in *Minecraft*. During the play-test, the participants are invited to build an environment based on their preferences, thus they have a hard time formulating what their preferences are. Recurring in the data, some of the participants have problems relating their preferences and needs in their building; however, some of them refer to the needs of youths in general, and move the preferences away from their own somewhat. One of the participants mentioned in the interview that games can offer a way to demonstrate how youths might want things to be, but adds, however, that "engaging youths might not be realistic" (P3). Another participant highlights not only the problem of engaging youths but states that the real dilemma is to get those responsible to build something for youths:

... but how do we get them to build something for teenagers, that's the big challenge, it's very easy to do that for parents of small children and stuff like that, like fixing a playground, but like how do we get activities started between the young people when they get to know each other because people are so damn isolated, eh they're like, you could make the people's stage, the people's house, what the hell is it called, the people's park, it was such a good thing when you had the loge, it's a good thing, maybe you can take that here. (P5)

3.4 Theme: Understanding needs

The interns, as well as the youths invited for the game test sessions, all have a similar task for their interaction with the game. The task at hand involves understanding the context of building an urban area in general terms and, with a departure from one's preferences, building this residential area for a specific number of inhabitants and specific target groups. Thus, when interacting with the game, the participants both struggle with understanding the task and trying to reach the goal. In the interviews with the interns, the reasons why something was built were not always clearly articulated:

I built a park and a soccer field, felt it was needed. The library is simply nice to have ... [M]ost places have it. (P2)

The library was added because P2 has observed those in his familiar environment. Also, their own and friends' needs were used as grounds for adding a place for youth to hang out. P5 stated that "teens like to sit outside. I am one of those". P5 also asked, "how to get places that are meant for teens?" On the other hand, it was hard to figure out what was relevant in terms of urban planning. This is exemplified by P2 when he focused on details inside apartment buildings and decor:

[A]n apartment that already existed, I just built an elevator and then I just decorated and so and so, what are the rooms called, with a kitchen like this, a bed and stuff like that, and then I rebuilt the balconies. (P2)

In this quote, P2 addresses one aspect of the needs he found important, relating to decor and interior designs. This was also prominent in the ethnographic data, as the interns often tended

to focus more on interiors and functions when building in *Minecraft,* rather than the functions of buildings and services provided in a city, such as hospitals, libraries etcetera. Even if they addressed these functions in their discussions about what they saw as important in a city, it was not shown in their *Minecraft* building practices.

P1 wanted to build from scratch even though the game environment contained non-developed areas:

> *I didn't come up with any of my own ideas right away, I might have a completely flat world instead of a pre-built world. (P1)*

This indicates that he is missing the point of the building assignments: even new residential areas are connected to existing ones. A similar issue was not present in other participants' designs or interviews.

However, as seen in the theme *understanding needs*, P1 and P2 built something that they were familiar with, possibly from their extensive playing. We can suspect that familiarity can work in two ways: it enables one to express oneself in *Minecraft,* but also that earlier learned behaviours can bleed into the planning tasks. In addition, P5 just built something without connecting what he built to the functions of the buildings. Both P1 and P2 had a hard time figuring out what they liked or needed in their surroundings, whereas P3 built more things based on what he wanted to have. Throughout the internship, the NEET participants (P1, P2) found it hard to locate their preferences concerning what they wanted to build in *Minecraft* while testing the mod. They often referred to their own experiences and preferences when discussing what to potentially build, but when it came to the actual building in *Minecraft,* they had a hard time showing what they had done and discussing why they had chosen to build it. During the internship's regular meetings, this was a recurring discussion.

This theme describes conceptualisations (or lack of them) of what kind of services and other needs participants have for the nearby environment. The data seem to indicate that the readiness, or challenges, in engaging in the planning task depend on one's understanding of one's own and other people's needs and uses of an urban environment.

4. Discussion

The themes presented in the section above indicate that *Minecraft enables* fast building and modifying of environments, and facilitates discussion before and after the changes. Seeing something helps to form opinions about the plan, and a built environment in a game forms a basis for discussing the plan. Based on this, the findings indicate that using *Minecraft* in planning processes helps the participants to visualise their environments, preferences, and needs. As demonstrated in the analysis, the use of *Minecraft* to fulfil this purpose is a tool similar to other serious games that have the potential to contribute to youth addressing challenging topics (cf. [25], [26], [27], [32]).

However, our findings also suggest that an invitation to discuss a plan and promote one's needs is insufficient. In particular, the NEET participants were not able to express their own preferences and needs. This can be related to the fact that NEET youth only use urban infrastructure and general public services to a limited extent, as shown in previous studies (see. [11]). The NEET participants had difficulties in building the local area, and in including functionalities that are often of importance in a city, thus they focus instead on decor and interior designs in their building practices. Being in a situation where you do not use the facilities and services provided in a local municipal setting might, of course, affect these choices. Also, not being able to express your preferences and needs in the local community building through the use of *Minecraft* may relate to the lack of understanding of what municipal

planning and community building means. To affect the planning by expressing needs means that one needs an understanding of what a living environment may involve. Without that understanding, there might be difficulties in forming opinions and preferences on locally relevant matters, and articulating wishes − one might just not be aware of what one can influence [11], [12], [13]. Looking at our data about participants' discussions in the study, it becomes clear that regarding the *opportunities* to influence, there is a gap between NEET youth and those in occupation or studies.

Minecraft, especially in creative mode with mods, allows fast prototyping and experiencing the changed environment in *Minecraft*. *Minecraft* is good (in terms of ease of building and modifying the environment) for visualising the plans and impacts of the choices in an understandable way. However, one needs to utilise mods to model things like public traffic or pollution, either by using existing mods, modifying existing mods, or building new ones. Moreover, a built environment in *Minecraft* helps in understanding the scope of plans and the potential and possibilities that the game environment affords for municipal and urban planning processes. *Minecraft* here can be seen as a boundary object to bridge the gap between visualising plans and understanding the potential and possibilities of influencing planning processes of urban environments.

In line with previous research on computer literacy and gaming among youths [19], all our participants had played *Minecraft* before and were familiar with how to move around and build things. While participants needed to learn how to use mod features, such as schematics for fast building, their prior experiences with *Minecraft* allowed them to pick up the new features quickly.

The interviews suggest that *Minecraft* can facilitate discussions about urban planning (cf. [21], [22], [23]). In the urban and spatial planning discourse, this finding could be of great importance in finding novel ways towards a more youth-inclusive planning practice [2], [15], [16], [17]. However, our data also suggest that there might be challenges for this specific group of youth when it comes to expressing preferences about urban environments. Even if the participants are computer and games-literate, in our study it emerged that the use of these skills for a meaningful planning-focused playing activity is somehow challenging (cf. [20]). The complexity of this is demonstrated by the themes; these suggest how understanding the needs of the population and self is important for placing functionalities, such as parks and libraries, in meaningful ways, especially if someone has limited experience with different types of services and functions of urban areas. Our participant, who explained what he does in his free time in the urban environment, was better able to express what he wants to see in that environment. For example, he wanted to see places where youths could hang out and stated that those places should be separated from children's playgrounds, as small kids might not feel safe when there are young adults hanging out in those spaces. The NEET participants, on the other hand, focused on building details without connection to functionalities, or based on norms of good life (e.g., a luxury house with a pool).

Our data also indicate how the NEET interns had different experiences and competencies for understanding and completing the tasks compared to the participants in the game test session. The NEET interns had a different awareness of the environment than the participants in the game test. Even though the interns had more in-depth experience with the conducted research and the concepts, such as spatial planning and urban governance, that were discussed during their internship, they still had a somewhat less conceptual understanding of the urban environment and planning than non-NEET participants.

The *Minecraft* map we used in the play-testing was not a model of the areas where the participants were living. This could have made planning tasks and articulating what kind of changes they would want to see in the area more difficult. All participants actively played computer games and *Minecraft*. Our results might not generalise to the populations of non-players of NEET and non-NEET groups.

This is an exploratory case study aimed at fostering reflection on specific topics and gaining a deeper understanding of the circumstances of young people in this context. The results can indicate the existence of observed phenomena, attitudes, and challenges, but not their prevalence [36]. By exploring the blind spots and deepening the understanding of the specific use of *Minecraft* in municipal work on NEET youth and their engagement in local governance, we discuss in this study ways of engaging such youths in discussions about their local residential areas that could be of use in urban planning processes. In line with this, an Estonian case study [42] discusses how staying home and playing games can lead to various life challenges. Limited engagement with services and social interactions may contribute to the issues described under the theme of *Understanding needs*. Previous studies using *Minecraft* also suggest that familiarity with the game enables youths to utilise it in various non-gaming tasks [43], [44].

Based on the above, we see the following implications for policy and practice. One key takeaway is that using platforms like *Minecraft*, with which youths are familiar, can not only attract them to activities but also help maintain their engagement over time. Familiarity with the tool, a sense of competence when using it, and the community aspect with other users all had a positive effect on engagement. Additionally, the tool made planning more relatable to younger demographics. Our findings suggest that games like *Minecraft* can be incorporated into tailored interventions that combine gaming with components designed to enhance opportunities for these groups of youths. In our study, we observed that serious games can provide a platform for youths to express their ideas and opinions in a safe and supportive environment. Youth voice is something that urban planners are increasingly aware of and interested in, especially the voices of often marginalised youths. These activities provide an opportunity to gain better insights into their perspectives. However, games such as *Minecraft* cannot alone solve issues of engaging youth in urban planning; as our results suggest, the limited knowledge of NEET youth (and maybe youths in general) about the services and functions of urban spaces is a challenge that requires other types of solutions.

In addition to the above, the results and the limitations of the study suggest a few topics for *future research:* what the long-term effects would be of serious games used in urban planning on the way information is collected and used in planning processes, and how these challenge or reinforce current approaches to fostering meaningful participation for youths.

5. Conclusions

This study examines how *Minecraft* can be used to engage youths − specifically NEET youth, those not in education, employment, or training − in discussions about their living environment. Conducted in collaboration with a Swedish municipality, our research falls within the domain of urban governance and planning. While previous studies have explored how serious games can amplify the voices of young and underrepresented groups, highlight their needs, and provide insight into their lived experiences, little research has specifically focused on NEET youth. We used *Minecraft* as our primary tool, but our findings extend to other serious games related to spatial planning.

The novelty of our study lies in using games to involve NEET youth in discussions about their urban environments. This approach offers valuable insights into both the opportunities and challenges of using serious games in spatial planning. We assume that games can capture young people's interest and that their interactive and immersive nature makes governance and planning processes more accessible and relevant to their everyday lives.

Two key findings emerge from our results: the importance of the gaming experience and the role of lived experience. While familiarity with a game like *Minecraft* facilitates engagement, a lack of knowledge about the surrounding environment can still be a barrier to meaningful participation in urban planning discussions. At the same time, (serious) games can potentially

create a safe and supportive platform for NEET youth to share their ideas and opinions, helping them feel heard and included in local decision-making.

Games can also simplify complex urban planning concepts, making them more relatable through interactivity and playfulness. *Minecraft*, for example, allows youths to explore and express ideas in a way that traditional planning discussions often fail to do. Topics that might otherwise seem distant or difficult become more engaging through play. However, we recognise that games should be used alongside other participatory methods, as young people are a diverse group with different needs and circumstances.

This study advances existing research by examining the use of a widely adopted commercial game, *Minecraft*, as a boundary object for participatory urban planning with NEET youth—a group rarely addressed in serious games literature—thus extending the discussion beyond child-focused or educational contexts.

In conclusion, there are both opportunities and challenges in using games like *Minecraft* for engaging the urban planning process. While games can serve as effective tools for initiating discussions, they are limited in capturing participants' lived experiences. Digital tools can enhance gaming experiences, but they do not necessarily bridge the gap between virtual environments and real-world urban complexities. Understanding these limitations is crucial for designing more effective engagement strategies that connect NEET youth to urban planning processes.

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Conflicts of interest

The authors declare no conflict of interests.

References

[1] United Nations, "Youth," United Nations. Accessed: Feb. 14, 2025. [Online]. Available: https://www.un.org/en/global-issues/youth

[2] R. Rodela and E. Norss, "Opening up spatial planning to the participation of children and youth: the Swedish experience," Eur. Plan. Stud., vol. 31, no. 2, pp. 252–269, Feb. 2023, doi: 10.1080/09654313.2022.2041557.

[3] P. Gurstein, C. Lovato, and S. Ross, "Youth Participation in Planning: Strategies for Social Action," Can. J. Urban Res., vol. 12, no. 2, pp. 249–274, 2003. http://www.jstor.org/stable/44320773.

[4] H. Paabort, P. Flynn, M. Beilmann, and C. Petrescu, "Policy responses to real world challenges associated with NEET youth: a scoping review," Front. Sustain. Cities, vol. 5, p. 1154464, May 2023, doi: 10.3389/frsc.2023.1154464.

[5] B. H. Holte, "Counting and Meeting NEET Young People: Methodology, Perspective and Meaning in Research on Marginalized Youth," YOUNG, vol. 26, no. 1, pp. 1–16, Feb. 2018, doi: 10.1177/1103308816677618.

[6] F. Jonsson, A. C. Gotfredsen, and I. Goicolea, "How can community-based (re)engagement initiatives meet the needs of 'NEET' young people? Findings from the theory gleaning phase of a realist

evaluation in Sweden," BMC Res. Notes, vol. 15, no. 1, p. 232, Dec. 2022, doi: 10.1186/s13104-022-06115-y.

[7] "Eurostat." Accessed: Mar. 15, 2024. [Online]. Available: https://ec.europa.eu/eurostat/

[8] C. Mellberg, R. Minas, T. Korpi, and L. Andersson, "Effective local governance assisting vulnerable groups: The case of youth not in employment, education or training (NEETs) in Sweden," Int. J. Soc. Welf., vol. 32, no. 1, pp. 20–31, Jan. 2023, doi: 10.1111/ijsw.12527.

[9] A. Furlong, "Not a very NEET solution: representing problematic labour market transitions among early school-leavers," Work Employ. Soc., vol. 20, no. 3, pp. 553–569, Sept. 2006, doi: 10.1177/0950017006067001.

[10] J. Rothschild, "The Logic of A Co-Operative Economy and Democracy 2.0: Recovering the Possibilities for Autonomy, Creativity, Solidarity, and Common Purpose," Sociol. Q., vol. 57, no. 1, pp. 7–35, Feb. 2016, doi: 10.1111/tsq.12138.

[11] S. Berglöf and E. Asplund, "Rapport förstudie Startplats Ung," Samordningsforbundet Huddinge, Botkyrka, Salen, Huddinge, 2021.

[12] O. García-Antúnez, M. L. Maurer, N. M. Gulsrud, S. Lundmark, and R. Rodela, "The contradictions of youth participation for intergenerational justice in urban environmental planning," Front. Sustain. Cities, vol. 5, p. 1250830, Sept. 2023, doi: 10.3389/frsc.2023.1250830.

[13] S. Lundmark, M. Jonsson, M. Myhre, A. Hjuberger, and R. Rodela, "Listening to the Future: Using Participatory Sound Fiction to Engage Young People in Urban Design," in 26th International Academic Mindtrek Conference, Tampere Finland: ACM, Oct. 2023, pp. 223–232. doi: 10.1145/3616961.3616981.

[14] M. Sousa, A. Pais Antunes, N. Pinto, and N. Zagalo, "Serious Games in Spatial Planning: Strengths, Limitations and Support Frameworks," Int. J. Serious Games, vol. 9, no. 2, pp. 115–133, May 2022, doi: 10.17083/ijsg.v9i2.510.

[15] M. Nordström, "Barnkonsekvensanalyser i stadsplaneringen," Boverket, 2020. [Online]. Available: https://www.boverket.se/sv/om-boverket/publicerat-av-boverket/publikationer/2020/barnkonventionen-i-fysisk-planering-och-stadsutveckling/

[16] J. Stenberg and L. Fryk, "Making School Children's Participation in Planning Processes a Routine Practice," Societies, vol. 11, no. 1, p. 3, Jan. 2021, doi: 10.3390/soc11010003.

[17] S. Cele and D. Van Der Burgt, "Participation, consultation, confusion: professionals' understandings of children's participation in physical planning," Child. Geogr., vol. 13, no. 1, pp. 14–29, Jan. 2015, doi: 10.1080/14733285.2013.827873.

[18] J. Delaney, "Minecraft and Playful Public Participation in Urban Design," Urban Plan., vol. 7, no. 2, June 2022, doi: 10.17645/up.v7i2.5229.

[19] A. Perrin, "5 facts about Americans and video games," Pew Research Center. Accessed: Mar. 15, 2024. [Online]. Available: https://www.pewresearch.org/short-reads/2018/09/17/5-facts-about-americans-and-video-games/

[20] H. Thornham and E. Gómez Cruz, "[Im]mobility in the age of [im]mobile phones: Young NEETs and digital practices," New Media Soc., vol. 19, no. 11, pp. 1794–1809, Nov. 2017, doi: 10.1177/1461444816643430.

[21] T. M. D. Classe, F. Janssen, and R. Araujo, "VAPBr: Values in Digital Games for Public Service in Brazil," Int. J. Serious Games, vol. 8, no. 4, pp. 25–48, Dec. 2021, doi: 10.17083/ijsg.v8i4.430.

[22] N. Pflanzl, T. Classe, R. Araujo, and G. Vossen, "Designing Serious Games for Citizen Engagement in Public Service Processes," in Business Process Management Workshops, vol. 281, M. Dumas and M. Fantinato, Eds., in Lecture Notes in Business Information Processing, vol. 281. , Cham: Springer International Publishing, 2017, pp. 180–191. doi: 10.1007/978-3-319-58457-7_14.

[23] I. J. Straand, A. Følstad, and J. R. Bjørnestad, "Exploring a Gaming-Based Intervention for Unemployed Young Adults: Thematic Analysis," JMIR Hum. Factors, vol. 11, p. e44423, Jan. 2024, doi: 10.2196/44423.

[24] C. Wrangsten, S. Ferlander, and S. Borgström, "Feminist urban living labs and social sustainability: lessons from Sweden," Urban Transform., vol. 4, no. 1, p. 5, Dec. 2022, doi: 10.1186/s42854-022-00034-8.

[25] M. Flanagan and H. Nissenbaum, Values at play in digital games, First MIT Press paperback edition. in Game studies / philosophy. Cambridge: MIT Press, 2016.

[26] K. Jorgensen and F. Karlsen, Eds., Transgression in games and play. Cambridge, MA: The MIT Press, 2018.
[27] H. Pötzsch, T. H. Hansen, and E. L. Hammar, "Digital Games as Media for Teaching and Learning: A Template for Critical Evaluation," Simul. Gaming, p. 104687812311662, Mar. 2023, doi: 10.1177/10468781231166213.
[28] P. Lai, "The literature review of technology adoption models and theories for the novelty technology," J. Inf. Syst. Technol. Manag., vol. 14, no. 1, pp. 21–38, June 2017, doi: 10.4301/S1807-17752017000100002.
[29] J. Stenros, "The Game Definition Game: A Review," Games Cult., vol. 12, no. 6, pp. 499–520, Sept. 2017, doi: 10.1177/1555412016655679.
[30] J. Piňos and J. Burian, "The Application of City-Building Games in Spatial Planning," in Geoparticipatory Spatial Tools, J. Panek, Ed., in Local and Urban Governance. , Cham: Springer International Publishing, 2022, pp. 147–185. doi: 10.1007/978-3-031-05547-8_8.
[31] G. M. Robinson, M. Hardman, and R. J. Matley, "Using games in geographical and planning-related teaching: Serious games, edutainment, board games and role-play," Soc. Sci. Humanit. Open, vol. 4, no. 1, p. 100208, 2021, doi: 10.1016/j.ssaho.2021.100208.
[32] B. de Andrade, A. Poplin, and Í. Sousa de Sena, "Minecraft as a Tool for Engaging Children in Urban Planning: A Case Study in Tirol Town, Brazil," ISPRS Int. J. Geo-Inf., vol. 9, no. 3, p. 170, Mar. 2020, doi: 10.3390/ijgi9030170.
[33] L. C. Sanz, S. Martens, and T. De La Hera, "The Case of Cities: Skylines Versions—Affordances in Urban Planning Education," Media Commun., vol. 13, p. 8747, Jan. 2025, doi: 10.17645/mac.8747.
[34] R. Magnussen and A. L. Elming, "Cities at Play: Children's Redesign of Deprived Neighbourhoods in Minecraft," in European Conference on Games Based Learning, Reading: Academic Conferences International Limited, Oct. 2015, pp. 331–337. [Online]. Available: https://www.proquest.com/conference-papers-proceedings/cities-at-play-childrens-redesign-deprived/docview/1728409682/se-2?accountid=11664
[35] A. Imam and C. Lahoud, "The Block by Block playbook: Using Minecraft as a participatory design tool in urban design and governance," UN-Habitat, 2021. [Online]. Available: https://unhabitat.org/sites/default/files/2021/09/1-bbb_playbook_publication_final.pdf
[36] J. Gerring, "What Is a Case Study and What Is It Good for?," Am. Polit. Sci. Rev., vol. 98, no. 2, pp. 341–354, May 2004, doi: 10.1017/S0003055404001182.
[37] W. A. Hoffmann and N. Nortjé, "Ethics Review Framework and Guidelines for Social Science Research," in Social Science Research Ethics in Africa, vol. 7, N. Nortjé, R. Visagie, and J. S. Wessels, Eds., in Research Ethics Forum, vol. 7. , Cham: Springer International Publishing, 2019, pp. 229–248. doi: 10.1007/978-3-030-15402-8_16.
[38] J. W. Creswell and J. D. Creswell, Research design: qualitative, quantitative, and mixed methods approaches, Fifth edition. Los Angeles: SAGE, 2018.
[39] R. K. Yin, Ed., The case study anthology. Thousand Oaks, Calif.: Sage Publ, 2004.
[40] V. Braun and V. Clarke, "Using thematic analysis in psychology," Qual. Res. Psychol., vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp063oa.
[41] Swedish Research Council, "Good Research Practice," Swedish Research Council, 2017. [Online]. Available: https://www.vr.se/english/analysis/reports/our-reports/2017-08-31-good-research-practice.html
[42] M. Leino, M. Hintsanen, T. Hintsa, P. Merjonen, and L. Keltikangas-Järvinen, "Family factors and NEET status: an Estonian case study," Res. Post-Compuls. Educ., vol. 18, no. 1–2, pp. 115–126, Mar. 2013, doi: 10.1080/13596748.2013.755845.
[43] T. Karsenti and J. Bugmann, "Exploring the Educational Potential of Minecraft: The Case of 118 Elementary-School Students," International Association for the Development of the Information Society, Dec. 2017. Accessed: Mar. 18, 2025. [Online]. Available: https://eric.ed.gov/?id=ED579314
[44] Svenskarna och internet, "Minecraft är den plattform som flest använt för att umgås med vänner i digitala spel," Svenskarna och internet. Accessed: Mar. 18, 2025. [Online]. Available: https://svenskarnaochinternet.se/rapporter/svenskarna-och-internet-2022/gaming-och-streamers/minecraft-ar-den-plattform-som-flest-anvant-for-att-umgas-med-vanner-i-digitala-spel/