

The Learning Potential of Minecraft: A Qualitative Study into the Opinion of Players

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Abstract

The current study focussed on the learning potential of the video game Minecraft as perceived by the young people who play Minecraft. All ten participants were between 14 and 18 years old and took part in a semi-structured interview with the aim to better understand the learning experience as perceived by the Minecraft players. All participants mentioned becoming more creative by playing Minecraft, although the processes which led to this development remained unclear. The same is true for the first component of creativity that was studied (imaginative thinking). The other component, the development of a venturesome personality, was not mentioned by the participants as something they believe to have learned while playing Minecraft. The current study emphasises the potential to use Minecraft in regular education for developing creativity, spatial perception and English.

Keywords: Minecraft, creativity, imaginative thinking, venturesome personality, development, learning experiences

The Learning Potential of Minecraft: A Qualitative Study into the Opinion of Gamers

In the past year, more than a quarter of the Dutch youth has played video games daily. Of all these 12 to 16-year olds, 11% plays at least four hours a day (Stevens et al., 2017). Since playing video games is a big part of the lives of youth, it is important to understand the possible effects of gaming on their development. Researchers are not unanimous when it comes to the effects of video games on children; some say it has positive effects (Verheijen, Stolz, van den Berg, & Cillessen, 2019; Zhao, Fu, & Maes, 2019) and potential (Shanbari & Issa, 2019), while others say it holds mostly negative effects (Altintas, Karaca, Hullaert & Tassi, 2019; Blackburn & Scharer, 2019; Burnay, Bushman & Larøi, 2019; Gentile et al., 2011). Some research has shown a link between playing video games and creativity (Jackson et al., 2012; Yeh, 2015). And another study has shown that video games can be a platform for game-based learning (Gee, 2007). Most of the studies named above focussed on the effects of playing video games. The current research will focus on the opinions of the players, to find out how the players think about playing a video game and about the learning experiences related to their development.

In this research, the concept of creativity will play a crucial role. Before explaining the relevance of focusing on this skill, it is important to have a common understanding of how the development of creativity is perceived in the context of this research. Creativity can be defined as developing the ability to perform deductive and inductive thinking and using problem solving strategies to generate novel insights and solutions (Wechsler et al., 2018). According to Qian and Clark (2016) creative development is necessary for success in our day-to-day lives, since creative thinking leads to the ability to solve problems in an innovative way, as well as the ability to resolve different challenges posed by the 21st century society. Creativity can be separated in several components, one of these is having a venturesome personality (Sternberg, 2003). This can be defined as a person that “seeks new experiences, tolerates ambiguity and risk, and perseveres in overcoming obstacles” (Sternberg, 2003). The explorative attitude that is part of a venturesome personality helps searching for solutions in new and uncertain situations. Another component is imaginative thinking. Sternberg (2003) describes this component as follows: “the ability to see things in novel ways, to recognize patterns, to make connections.” These skills are important to be able to think about and solve problems in a creative way. Both components, a venturesome personality and imaginative thinking, are interesting components for this research because they are the most obviously needed skills when playing video games. For example, when playing a video game the player

will continuously end up in unfamiliar situations and he or she will have to make decisions or solve problems in a creative way. In sum, creativity in the context of this research thus means the set of skills that help in creative and innovative decision-making that help young people in the 21st century society becoming successful.

Checa-Romero and Gómez (2018) have found that the video game Minecraft promotes creativity in students by implementing it in courses at school. Furthermore, on the website of Minecraft descriptions for every school-age group on how to implement and use Minecraft in standard education can be found (Microsoft Studios, 2019). It is therefore likely that Minecraft can be used to teach new skills to and promote creativity in young people. To further understand the game Minecraft and how it promotes creativity, it is important to briefly explain the game: Minecraft is a sandbox type of game, which means it offers an open virtual world with no plot or storyline (Checa-Romero & Gómez, 2018). According to Squire (2008) sandbox games stimulate players to express themselves and think in a creative way. It gives the player freedom to explore the different possibilities (Minecraft: Persson, 2009). These possibilities and the consequences can differ from the 'real' world (Fisher, 2004). According to research by Checa-Romero and Gómez (2018) the players create their own virtual world in the game, which appeals to the youth's imagination. The rewards gamers get for their creativity can lead to a higher level of confidence (Checa-Romero & Gómez, 2018). The game can be played as a single player and multiplayer game. The game was developed by the Swede Markus Alexej Persson and the first version came out in 2009. (Minecraft: Persson, 2009).

Since many young people play video games (Stevens et al., 2017) and Minecraft has been found to promote creativity (Checa-Romero & Gómez, 2018), the development of creativity through playing Minecraft will be central in this research. This project focuses on the perspective of the youth playing Minecraft. In the literature found so far, researchers focused mostly on the game itself and the effects of Minecraft. The focus of the current study will be on the processes of learning perceived by the young people themselves. In the literature, significant effects regarding creativity have been found, and the current research focuses on the learning experiences of the players regarding their creative skills. This is done to see whether the players recognise the scientific effects and possibly distinguish other learning experiences as well.

The youth in this sample will be between 14 and 18 years old. Around this age, the cognitive transition from childhood to adulthood becomes evident: During adolescence, the brain undergoes a synaptic reorganization which enhances the decision-making processes,

memory, and self-control of the children (Blakemore & Choudhury, 2006). Since this research is focused on the opinions and knowledge of the youth, it is also useful if they can think in abstract logical ways, for this ability will make it easier to think ‘outside the box’ and in ‘what if’ situations. The transition to thinking in such abstract ways begins around 12 years old (Huijt & Hummel, 2003) and progresses throughout adolescence and adulthood. Due to their advanced cognitive development, interviews with older adolescents will likely yield more interesting results than interviews with younger adolescents.

It is expected that this study will show that young people’s opinions on games, and Minecraft in particular, are positive and that they believe to learn useful abilities through playing Minecraft. The specific abilities that will be focused on are creativity and the development of a venturesome personality and thinking in an imaginative way. This research will hopefully contribute to the scientific debate about games and creativity. To guide this research, we have the following research questions:

1. What are young people’s (aged 14 to 18) opinions regarding their development of creative skills within the gaming environment, when playing Minecraft?
 - a. What are young people’s (aged 14 to 18) opinions regarding their development of a venturesome personality within the gaming environment, when playing Minecraft?
 - b. What are young people’s (aged 14 to 18) opinions regarding their imaginative thinking skills within the gaming environment, when playing Minecraft?

Method

The aim of this study was to find out if young people (aged 14 to 18 years old) experienced a development in their creative skills when playing the video game Minecraft. The focus of this study was not to find an effect, establish causal relationships, or come to a universal truth about learning. The focus was to describe and understand the thoughts of adolescents about their development through playing video games. This made this research a descriptive research which is well suited for a qualitative research design.

Procedure

Results have been acquired by conducting semi-structured interviews. This type of interview allowed the participants’ answers to determine how the interview went and what the subsequent questions were. This openness has given the participant the freedom to share all he or she would like. Furthermore, when the answer brought the interview to an interesting topic that was not on the topic list, there was room to thoroughly discuss and understand this topic

by asking follow-up questions. However, in the cases where the participants did not give lengthy or elaborate answers, the structure from a semi-structured interview gave the interviewer something to fall back on. This structure has also prevented the conversation from straying too far from the initial focus of this study. In relation to investigating learning experiences, this structure made it possible to acquire as much relevant information as possible in a relatively short conversation.

The interview questions were based on the indicators that match and describe the topics from the research questions, such as the topic ‘creativity’. As appointed in the literature review, this research focuses on two specific creative skills, namely ‘imaginative thinking’ and ‘developing a venturesome personality’. Since there has not been much research about these two skills, not many indicators were known beforehand. For this reason, it was decided to transcribe and evaluate the first few interviews and see if any new indicators or topics came up. Adjusting the topic list and adding new questions could have resulted in interviews that are not entirely comparable to the earlier conducted interviews. However, by revising the topic list during the data collection period, the researchers were also able to pose more focused questions to get a good and complete answer to the research questions.

Sample

The population on which this research focused are young people playing Minecraft with the age of 14 to 18. Several approaches have been used to find participants. Schools, Minecraft servers¹ and acquaintances have been approached, and a message has been posted on the Facebook ‘Minecraft Nederland’ page. Since this did not lead to a sufficient number of participants (ten was the minimum), messages have also been sent out to youth on the gaming platform ‘Twitch.tv’². Those that responded to the messages were asked if they knew any other interested gamers. This technique of recruiting is called a ‘snowball sample’. A positive side of this sampling technique is that it is easier to find participants in a short amount of time. However, because of the snowball sampling technique, some of our participants knew each other. These participants have played together, and it is therefore likely that they play Minecraft in a similar way and hold similar opinions. The snowball sampling technique might thus have resulted in a less diverse dataset.

Reliability. Having a conversation with the participants made it possible to understand their train of thought and how they think about the development of their creative

¹ Minecraft server is a multiplayer server that allows two or more players to play Minecraft together.

² Twitch.tv is a platform where video game players can post livestreams when they are playing, follow other players and get in touch with other players. The platform is not limited to Minecraft players.

skills through playing Minecraft. During the interviews it was possible to let participants explain their thoughts in more detail. This would not be possible in a survey set-up or when you are observing participants. The reliability of this study was enhanced by the consistency in the order of the questions and using the same basic topic list for every interview.

Validity. As well as the reliability, it is also important to focus on the validity of this research. There are two kinds of validity to consider.

Intern. To improve the internal validity, participants were asked to bring pictures of an old and a recent project. Having these pictures helped visualize the possible progress that the participants might report. Furthermore, it was hoped that this visualization helped the participants in explaining their development. Unfortunately, in some interviews this technique could not be used. This was either because of the forgetfulness of the participant or because the participant was interviewed in a video call. Another way to enhance internal validity was asking active Minecraft players to participate. These youth have played Minecraft for several years and thus have extensive knowledge about the game. Furthermore, active Minecraft players have more experiences to report, which has led to more interesting interviews.

Extern. When it comes to the external validity of this study, it is important to understand that the aim of this research was not to generalize to the population. The focus of this qualitative study is to understand how the participants of this study feel and think about the video game Minecraft. We are interested in their opinions and experiences and wonder if parallels can be drawn with the experiences of other participants when it comes to learning.

Analysis

Concepts. The sensitizing concepts in this research were: ‘creativity’, ‘imaginative thinking skills’, ‘a venturesome personality’ and ‘learning’. Sensitizing concepts are the most important concepts that give direction to the study (Boeije, 2009). To operationalize the concepts, indicators have been established. These indicators are based on the definitions of Sternberg (2003) and Wechsler and his colleagues (2018). See Table 1 for an overview.

Analysing interviews. After the interviews were transcribed, the data has been ‘open coded’ with the goal of providing a basic overview of the perspectives that the participants held. Afterwards, recurrent themes were looked for and these will be coded during ‘axial coding’. This led to a structured coding framework. The next step was ‘selective coding’

Table 1

Sensitizing concepts and their indicators

Sensitizing concepts	Dimensions	Indicators
Creativity	Imaginative thinking	See things in novel ways Recognise patterns

		Make connections Creatively solve problems
	Venturesome personality	Explorative Ambiguity and risk-taking Seeks new experiences Uncertain situations Overcomes obstacles
Learning	Creative development	Innovative Problem solving

to design a model or theory about the learning aspect of playing Minecraft. However, due to limited time, this model and/or theory could not be developed. For the analysis, the programme NVivo 11 Pro was used.

Ethical justification. In this research, multiple ethical issues have been taken into account to protect the well-being of the participants. Firstly, the voluntary nature has been stressed at all times. Furthermore, the participants and the researchers have signed an Informed Consent form (Appendix 1). Participants under the age of 16 also needed the permission of a parent or guardian. Through this form, participants were made aware of their part in this research and the rights that they had. By signing, they also gave permission to make sound recordings of the interview. The results have been processed in an anonymous way and the researchers reported as truthful and complete as possible. Lastly, the researchers are aware of the conflicting interests in this study, in that the researchers would like to acquire new data by conducting interviews with participants. The real burden of this research thus lies with the participants who share insights in their private life.

Results

This study focuses on the learning experience of creativity, imaginative thinking and a venturesome personality by playing Minecraft, as perceived by the Minecraft players. The experiences and opinions of the youth playing the game are used to find out whether the players believe they were able to develop these skills and, if yes, how they developed them. The transcribed interviews have been open coded using the program NVivo, before being axial coded. For example, all the open codes that said something about being creative in Interview A-E (e.g. ‘own idea’, ‘imaginative’, ‘testing own ideas’, ‘creatively solve problems’) have been labelled as ‘creativity’. This round of axial coding helped the researcher understand recurrent themes and patterns to answer the research questions.

To answer the research questions, ten interviews have been conducted with youth between 14 and 18 years old. Participants A-E have been interviewed about creativity and imaginative thinking, Participants 1-5 have been interviewed about creativity and

venturesome personalities. All ten participants have played Minecraft for several years and nine of them are still active players, meaning that they still play Minecraft regularly. All participants started playing at the end of primary school, around the age of 11 or 12. The first seven interviews have been conducted in real life, the latter three were conducted through the video-calling service Discord. This was due to conflicting agendas and the inability to travel far because of the time pressure. The use of a video-calling service might have had a small effect on the results, since the social interaction between the participants and the researchers was different from the interviews in real life due to technological disruptions. The first seven participants were asked to bring projects they had made in the beginning and further down the line of their Minecraft career, only Participants two and D forgot. The three interviews conducted through Discord were not asked to bring these projects, instead, the researchers asked if they could remember the progress they have made in their building skills.

From interviews 1-5, several recurring themes were distinguished by labelling all the statements and answers from the participants. Later, these labels were revised and coupled where possible. These new labels were then put under the themes 'creativity', 'challenges', 'social side of gaming', and 'Minecraft in regular education'. Due to the topic of the interviews and the specific questions that were part of it, creativity was found to be an important theme after analysis. This was in line with the expectations and hypothesis of the researchers. The social possibilities that Minecraft offers were mentioned by most of the participants when asked what they like most about the game. And lastly, all five participants mentioned the learning potential of Minecraft in regular education. The results on these two new themes shall also be discussed.

From the interviews with Participants A-E the open codes were divided into five categories: Namely 'creativity', 'inspiration sources', 'building process', 'skill development', and 'opinions about Minecraft'. These categories will be discussed in more detail after the results on Minecraft in regular education.

Creativity

When asked what the participants believed to have learned by playing Minecraft, all five mentioned becoming more creative. They noticed this by the ease with which they came up with new projects and details. They also think about their design more thoroughly before starting to build it, then in the beginning. Participants two, four and five also mentioned the transition of these skills into real world projects and tasks. Participant two made a miniature treehouse for school and used the creative thought processes which he learned by playing Minecraft. Participant four refurbished a sailing boat, during this project he used colour

combinations and types of wood in the same way as he would do in Minecraft. Furthermore, during his study as a furniture maker he found out he uses the same kind of patterns and wood as in the game, stating that the game helps him decide what he believes looks best.

All five mention the creative side of Minecraft with most stating that they enjoyed working creatively and with endless possibilities. Participant five said he is more focused on fighting and builds solely for safety, but even he mentioned the use of details and different shapes in his designs in comparison with what he made several years ago. Although the specific processes of how the participants learn still remain unclear, it can be stated that the participants believe they became more creative by playing Minecraft.

Challenges

Contrary to the hypothesis, none of the participants mentioned a learning experience related to the development of a venturesome personality by playing Minecraft. However, throughout the interviews, attention was drawn to various challenges and difficulties that the participants encountered while playing. Participant one and four stated that they enjoy these challenges and say it makes the game more interesting. Participant three mentioned that the difficulties he overcame during the game gave him a satisfied and proud feeling. When encountering difficulties and unexpected things, the first three participants stated that they were motivated to continue and learned through trial and error to get better at the game. In conclusion, although the participants did not mention the development of a venturesome personality, they recognize the challenges and difficulties of the game and for Participant one and four these challenges were enjoyable.

Social side of gaming

One unexpected theme that occurred and was important to all participants was the social side of gaming. All five participants stated that they used Minecraft to meet with current friends, but also to make new friends. This was most clearly mentioned by participant four who stated that he had made friends with people from all over the world. The participants stated that these friends helped them learn more about the game. Participant three also mentioned the possibility of making grander projects by working together. Participant five said that he believes the game is more fun to play if you do it with friends. Participant two however, mentioned that he sometimes prefers to play alone, since playing alone helps him think more clearly and offers him more freedom. But even Participant two said he enjoys playing Minecraft with friends because it allows him to do something that they all like, together. These possibilities for meeting with new and old friends are important to all participants and for some it motivated them to keep playing longer than when they play alone.

Since the social side of Minecraft was part of a learning experience for the participants, these results have been included in this study, even though the theme was not part of the research questions.

Minecraft in regular education

When asked about their own learning experiences, participants often mentioned that others could also learn from the game. When the researcher asked whether they believe Minecraft could be used in regular education, all five said yes without hesitation. Participant one told about his own experiences at primary school where the teacher tasked him and the rest of the class with building anything they came up with. Participant two mentioned the possibility for architecture students to build something in Minecraft before starting to build it in real life. Participant three told us his English improved because of Minecraft and said the game could also be used for the training of spatial perception. Participant four also mentioned the improvement of his English and mentioned the technological and programming side of Minecraft as well. This could be taught to students by letting them design their own 'modifiers' of 'modpacks'. Furthermore, he mentioned the development of creative skills for children in primary school as well as problem solving for children in lower secondary school. Participant five mentioned the learning of spatial perception as well as the use of 'chemistry modifiers' where the children can experiment with mixing different fluids and chemicals to see the effect. Participants A and E also mentioned their improvement in English. Mostly, the participants agreed that most learning potential of Minecraft was for children at the end of primary and the beginning of secondary school.

Creativity and inspiration

Inspiration resources

During the interviews, the five participants together named 15 different inspiration resources. The most named resource is YouTube. When they started to play Minecraft, all participants used YouTube to watch videos about Minecraft and copied building structures from the videos to recreate them in the game. After a few years of playing, participants stated that they understand the game better and only use YouTube for new building ideas or to find a technique on how to build something. Participant E used to watch famous YouTubers play Minecraft, and later on he became a famous YouTuber himself. He started live streams and created his own channel on YouTube. He became an inspiration source for other players. Participant A named that after using a lot of YouTube videos, he challenged himself to build his own idea. When this project was finished, he felt very proud of himself.

Other commonly named sources of inspiration are surroundings and music. Participant C is a fan of the band Twenty-One Pilots. She recreated the members of the band in Minecraft. Participant A plays guitar, and once used the lyrics of a song as inspiration to build something new in Minecraft. Participant E knows somebody who recreates famous places in the world, such as Disneyland or the country The Netherlands. In these Minecraft Worlds other players can visit and play. Participant C named she mostly recreates cartoons she sees on TV. She does this all by herself, without the help of videos. She explains that in the beginning the cartoons looked very minimalistic, later on she learned how to build in more details to make it more look-alike. Apart from YouTube, there are many more sources where the participants drew their inspiration from, these sources are highly diverse.

Creativity and building processes

Participants named that they like the game Minecraft, because they can use their own imagination while playing. Participant E: “I think so, and also because you have that freedom, you can just let your own imagination run wild.”³. All participants believe that the game offers a lot of freedom and that they can build anything they want. The interviews show that participants do not all play the game in the same way. Participant B and D like to build unrealistic things in unrealistic sizes, while participant A, C and E like to build as realistic as possible. Participant A and C liked to challenge themselves to try out techniques or their own ideas by themselves, before looking up on the internet on how to do it. Participant B, however, prefers to look it up first, and then implementing it himself. All the participants explained that during the building process, they come up with own new ideas to build.

Development through the game

The results show that participants develop several skills over the years by playing the game. All participants state they are building bigger compared to when they just started playing. In the beginning, participants used to build small houses or temples or other things. By practicing more and playing longer, they started to build bigger things, with more details. This is more difficult because you need to have better insight and you must have enough ideas of what you want to build. Participant A is also building more technical projects than in the beginning. Participant E states that his social development has improved because of the game. He has more friends and he is more likely to make contact with someone new.

Opinions about Minecraft

³ “Dus ik denk wel, en ook doordat je die vrijheid hebt, kun je je eigen fantasie gewoon de loop laten zeg maar.”

All participants believe that Minecraft offers a lot of freedom. They state that this is one of the reasons why they like the game so much. The player is in control of how he plays the game. “Yes, because in most of the games you can't create that extensively and in Minecraft you can, so that's the great thing about it.”⁴ (participant B). Participants also believe that they can express their creativity because of that freedom. All participants like the game because it is never ending.

Summary

All ten participants believe they are more creative now than when they began playing Minecraft. They believe this to be the result of practice and experience. They did not believe to have become more venturesome, although some participants took joy in the challenges and difficulties of the game. The gamers have not stated that they believe to have a bigger imagination by playing Minecraft. However, participants did mention to come up with new ideas easily while building and are able to build bigger things with more details. Furthermore, even though they all used YouTube in the beginning as an inspiration source, they understand the game better after a few years, leading to them only using YouTube for new building ideas or for information on a new technique. Some even stopped using YouTube altogether and solely create their own ideas.

During their development process, other differences have become clear as well; every participant played Minecraft in their own unique way. Some prefer to build realistic things, others prefer the more unrealistic things. This is also what makes Minecraft such a great game according to the participants. It offers a lot of freedom, there is not one way in which Minecraft must be played and it is never ending. Apart from their creative skills, participants also mentioned the development of their social and English language skills. And lastly, another new result that came forth from the interviews was the perceived potential of using Minecraft in regular education.

Discussion

In this research, the focus was to find out how young people aged 14 to 18 believe they develop their creative skills by playing the video game Minecraft. Literature suggested that Minecraft has a positive influence on the development of creativity of young people (Checa-Romero & Gómez, 2018) and other literature suggested that ‘sandbox games’, such as Minecraft, provides the video game player with a good learning environment to think and express themselves in a creative way (Squire, 2008). Since many young people play video

⁴ “Ja, want de meeste de meeste games kan je niet zo uitgebreid iets creëren en in Minecraft kan dat wel dus dat is het handige eraan.”

games for a vast amount in their day to day lives, this research focuses on the learning experiences players go through while playing Minecraft.

In accordance with the discussed literature (Checa-Romero & Gómez, 2018; Squire, 2008), our study found that all participants believed to be more creative now than when they started playing Minecraft. The two components of creativity which were central in our research were the development of 'imaginative thinking skills' and 'a venturesome personality' (Sternberg, 2003). According to James Gee, a good video game stimulates players to solve interesting and challenging problems (2007). Fisher adds to this that Minecraft stimulates players to play together to solve different challenges (2004). Results of the current research indicates that the participants enjoy playing Minecraft together, however the participants did not mention that they play together to resolve challenges. Furthermore, the participants did not report that they developed a venturesome personality. However, participants do believe they became better at creatively solving problems. This result matched with the research done by Fisher (2004).

Other results that came forward but were not found in existing literature includes the use of inspiration sources such as YouTube and the development reflected by the building projects of most of the participants which became bigger and more detailed. This hints at the development of the skill imaginative thinking, since the imagination plays a big part in building their own ideas and adding details. In conclusion, it can be stated that participants believed they became more creative by playing Minecraft, and better at imaginative thinking. Even though they enjoyed challenges, the participants did not mention they obtained a venturesome personality. For all the above mentioned results, the process of the development was not mentioned by the participants and thus remains unclear. More research is needed to understand the developmental processes the participants mentioned.

The learning processes which were part of the research question of this study, remain unclear. However, since this is an important aspect for truly understanding the learning potential of Minecraft, it is suggested to research these processes in a follow-up research. In this study, the focus lay on creativity. However, the participants mentioned they got better at English (N=4) as well as their spatial perception (N=2). These other forms of learning can also be interesting for future research.

The aim of this study was not to find an effect, but to understand the opinion of Minecraft players. The current research is thus useful as a descriptive study which gives an insight to the opinions of a few Minecraft players, which could trigger additional research. Furthermore, the sampling technique of this study meant that some of the participants knew

each other and played Minecraft together. It was expected that the participants shared their opinions about the game, which would mean that less new data would be found in the interviews. However, all these participants reported a different opinion of Minecraft and played the game in different ways.

To ensure the reliability of this study, the same questions were asked in different ways to see if the participant would report the same opinions. During the interviews, it was found that the participants reported more and new information when they were asked the same question twice. In this new information they did not contradict themselves. To ensure the validity of this research the researchers both kept a written copy of the research questions while analysing the data. They did this to constantly reflect on the research question and only analyse what was relevant to answer the research questions. In sum, several measures were taken to ensure the validity and reliability of the research.

This research is one of the first studies to focus on the opinion of the video game players to understand the learning potential of Minecraft. Existing research mostly focused on the game itself and the effects of Minecraft. Instead, the focus of the current study lay on the processes of learning as perceived by the young people themselves. The opinions of the participants are valuable, not only for the information on development that was provided, but also to understand how young people feel about Minecraft and to give them a voice in the gaming world. This study showed that the participants believe they have become more creative while playing Minecraft, which is in line with the findings of existing literature.

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Appendix 1: Informed consent

Toestemmingsverklaringformulier (informed consent)

Titel onderzoek:

Verantwoordelijke onderzoeker:

Met uw ondertekening van dit document geeft aan dat u goed bent geïnformeerd over het onderzoek en de manier waarop de onderzoeksgegevens worden verzameld, gebruikt en behandeld.

Indien u vragen had, geeft u bij ondertekening aan dat u deze vragen heeft kunnen stellen en dat deze vragen helder en duidelijk zijn beantwoord. U geeft aan dat u vrijwillig akkoord gaat met uw deelname aan dit onderzoek. U ontvangt een kopie van dit ondertekende toestemmingsformulier.

Ik ga akkoord met deelname aan een onderzoeksproject geleid door Anika Boswinkel en Véronique Diepmaat. Het doel van dit document is om de voorwaarden van mijn deelname aan het project vast te leggen.

1. Ik kreeg voldoende informatie over dit onderzoeksproject. Het doel van mijn deelname als een geïnterviewde in dit project is voor mij helder uitgelegd en ik weet wat dit voor mij betekent.
2. Mijn deelname als geïnterviewde in dit project is vrijwillig. Er is geen expliciete of impliciete dwang voor mij om aan dit onderzoek deel te nemen.
3. Mijn deelname houdt in dat ik word geïnterviewd door Anika Boswinkel en Véronique Diepmaat, onderzoekers van de Universiteit van Utrecht. Het interview zal ongeveer 60 minuten duren. Ik geef de onderzoekers toestemming om tijdens het interview geluidsopnames te maken en schriftelijke notities te nemen.
4. Ik heb het recht om vragen niet te beantwoorden. Als ik me tijdens het interview ongemakkelijk voel, is het mij duidelijk dat ik op elk moment mijn deelname, zonder opgaaf van reden, kan stoppen.
5. Ik heb van de onderzoekers de uitdrukkelijke garantie gekregen dat ze er zorg voor dragen dat ik niet ben te identificeren in door het onderzoek naar buiten gebrachte gegevens, rapporten of artikelen. Mijn privacy is gewaarborgd als deelnemer aan dit onderzoek.

6. Voor bezwaren met betrekking tot de opzet en of uitvoering van het onderzoek kan ik me wenden tot de vertrouwenspersoon wetenschappelijke integriteit van Universiteit Utrecht (tel: 06-51224293; email: vertrouwenspersoon-wi@uu.nl).

7. Ik heb dit formulier gelezen en begrepen. Al mijn vragen zijn naar mijn tevredenheid beantwoord en ik ben vrijwillig akkoord met deelname aan dit onderzoek.

8. Ik heb een kopie ontvangen van dit toestemmingsformulier dat ook ondertekend is door de interviewer.

Naam deelnemer:

Datum:

Handtekening deelnemer:

Indien de deelnemer onder 16 jaar is, in te vullen door ouder/verzorger

Naam ouder/verzorger:

Datum:

Handtekening ouder/verzorger:

In te vullen door de uitvoerende onderzoeker

Ik heb een mondelinge en schriftelijke toelichting gegeven op het onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker:

Datum:

Handtekening onderzoeker:

Appendix 2: Allocation of tasks

Abstract - Véronique

Introduction - Anika

Methods - Véronique

Results - Véronique

Discussion - Anika and Véronique

Presentation - Anika