



Funded by the
Erasmus+ Programme
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Video Games/Minecraft and Language Learning

IO7: Video Games/Minecraft and Language Learning

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EU FUNDED GUINEVERE PROJECT (2017-2019)

IO Number: 7

IO Name: Videogames/Minecraft and Language Learning

Description:

Minecraft first came to prominence in around 2009 and has since developed via its educational version into a game used by over 30 million players, particularly those the primary and secondary school age range. The game's influence derives primarily from its ability to allow children to build and create new structures using a process of trial and error or learning from experience. Minecraft lends itself to project-based learning in particular in which users can carry out a series of creative tasks either alone or in multiplayer mode. In the context of language learning, these tasks and projects can be conducted in a foreign language and aid role-playing. Furthermore, Minecraft like many serious games has given rise to text-based offshoots in the form of blogs and wikis, in which users detail all aspects of the game world in minute detail and then create machinima or short digital videos to explain to other users how to develop their proficiency. The narratives that accompany these creations can be compiled in foreign languages and many opportunities are presented to language learners to develop their competence through interaction in a variety of target languages. In this IO UCLAN will engage and evaluate a primary school in the UK that has been using Minecraft for project-based learning and work with them to develop an approach which uses the virtual world to develop foreign language learning in French or Spanish. This will be set in the context of existing research on the field and machinima will be used by the learners to capture key learning episodes and examples of tasks that have been developed in-world.

Dissemination Level: Public

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List of Abbreviations

BYOD	Bring your own device
CALL	Computer-assisted language learning
CLIL	Content and Language Integrated Learning

CMC	Computer-mediated communication
DS	Digital Schools
EFL	English as a foreign language
ESL	English as a second language
EU	European Union
FL	Foreign language
GUINEVERE	Games Used IN Engaging Virtual Environments for Real-time Language Education
ICALL	Intelligent computer-assisted language learning
ICT	Information and communication technologies
L1	First language
L2	Second language
MALL	Mobile-assisted Language Learning
MC	Minecraft
MMOG	Massively multiplayer online games
MOOC	Massive Open Online Courses
MOODLE	Modular object-oriented dynamic learning environment
OECD	Organization for Economic Co-Operation and Development
OFSTED	Office for standards in education, children's services and skills
OS	Open Simulator
PC	Personal computer
PISA	Programme for International Students Assessment
SL	Second Life
SLA	Second language acquisition
TELL	Technology-enhanced Language Learning
TL	Target language
VLE	Virtual learning environment
WELL	Web-enhanced language learning

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my.sharepoint.com/:v/g/person/carainbow_uclan_ac_uk/ESTYoU03hwBCp6a_XrpXS6wBSvLnT2o--p6sP6H0MYTtw?e=8DiamL

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1. Introduction

This report focuses on activities conducted during the pilot testing phase of the GUINEVERE project. Well designed and well conducted pilot studies are essential in any project as they inform about the best research process and occasionally about likely outcomes. They can be “time-consuming, frustrating, and fraught with unanticipated problems, but it is better to ... deal with them before investing a great deal of time, money, and effort in the full study” (Mason and Zuercher, 1998, p.11).

Reliability and accountability are at the core of any solid research and they have been ensured in this study allowing researchers to make the best use of their research experience by reporting issues arising from all parts of a study, including the pilot phase (Gray, 2013).

The pilot testing took place entirely in the GUINEVERE Minecraft server. It was divided into two phases: the first one is represented by the GUINEVERE Summer Camp and the second one by the Guinevere UK Primary School Field Testing. The following paragraphs outline the pilot test events and their related outcomes. The first section focuses on the essential description of the ethical considerations, protection of participants and informed consent provided and exercised throughout the project. The following sections are dedicated specifically to the GUINEVERE Summer Camp and the Guinevere UK Primary School Field Testing events. Here information regarding the participants and the sessions organized are presented together with a detailed description of the activities conducted in world and examples of key learning episodes provided by excerpts of video-recordings. The final section focuses on the analysis and discussion of the data gathered through the two pilot testing events looking at the benefits and challenges encountered and comparing and contrasting the two phases in relation to the literature and the project aims and objectives.

2. Ethical considerations

Any research that involves human participants raises important and critical ethical considerations. Some of these considerations may appear as a matter of pure courtesy or common sense while others reveal quite complex scenarios. Firstly, it is important to specify what we mean by ethics. Ethics is a philosophical term derived from the Greek word *ethos* which means character or custom. As a consequence, research ethics refers to those moral principles that guide research projects (Economic and Social Research Council, 2004). Homan (1991:1) defines it as the 'science of morality' meaning that research has to be conducted in a responsible and morally defensible way. It has been also argued that, in a time of globalization, there is an urge for an adaptation of the existing Western framework to diverse contexts, having for those contexts very different ethical values (Ntseane, 2009).

There are three main objectives in research ethics. The first is the protection of human participants, avoiding any type of "harm" (from physical to mental and emotional harm).

The second objective is to ensure that the research is conducted in a way that allows participants to have sufficient and accessible information about the project so they can make an informed decision on taking part or not. Finally, the third objective is respecting the privacy of participants and avoiding deception (Gregory 2003; Gray 2013). The following paragraphs will examine each of these concerns in relation to this study.

2.1 Protection of participants

Avoiding harm is the first principle that needs to be addressed when conducting research. Research can be considered harmful when it causes anxiety, stress, embarrassment or when it produces general negative emotional reactions (Gregory 2003; Gray 2013). Sudman (1998) states that avoiding harm could include simple acts such as scheduling interviews to avoid disruption to the participants. Therefore, ethically acceptable research should obey the principle of respect for persons. This means that a study has to be well designed and organized in order to achieve meaningful results in an appropriate way. It is important to highlight that even if a research project may not cause any injury, the fact that the results may be inadequate is nonetheless disrespectful. Similarly, a study's research design should not represent a burden to any participant unless there are some compensating gains (Sales and Folkman 2000; Simons and Usher 2000). According to Gray (2013), researchers should go beyond avoiding harm to participants aiming instead for positive and meaningful benefits. Among the various potential benefits there is the vital element of adding valuable knowledge to the social and educational human class.

Participants in this study were always treated with respect and politeness. The project partners were constantly focused on ensuring that respondents were participating voluntarily with the choice to withdraw at any time. Collection, storage and possible publication of the data were explained in great depth ensuring anonymity in all the phases.

2.2 Informed consent

Informed consent is a principle through which respondents are provided with precise and clear information about the research project; this allows them to make an informed decision about participating or not in the study (Oliver 2010; Gray 2013). As Sudman (1998) indicates, the amount of information given to participants should reflect the degree of risk involved in the study. Details that should be included in the informed consent are: the purpose of the study; how the study will be carried out; the expected duration; any specific risks or benefits; the type of information required by the researcher and finally, who will have access to the data gathered (Ntseane 2009). Informed consent is particularly important for groups that are considered “vulnerable” such as children, people with special educational needs, and refugees (Gray 2013). Having good and clear informed consent forces researchers to reflect on and clarify the purpose of their research, it also helps research participants to have more confidence in the research and consequently be more open in their responses and finally, having more confidence in the research generally results in higher participation rates.

It is essential that the information given to the participants is clear, simple and succinct so that a wide variety of participants can understand them. Participants were provided with an official information sheet which outlined:

- The title and the purpose of the study
- A description of the research method and the role of the participants
- The type of information that will be collected and how confidentiality, anonymity and privacy will be maintained
- How the data will be securely stored and used after collection

Voluntary written informed consent was obtained from the participants offering a copy for them to keep. In the consent form participants confirmed to agree to the following:

- the nature of the study and their role as participants
- how the collected data will be used
- participation implies audio and video-recording
- the possibility to withdraw participation from the study at anytime
- participants are entitled to full confidentiality

- there is no obligation to participate in the study

Participants in this study were not placed under any pressure or coercion to take part in the project. All respondents have been treated with respect and dignity.

2.3 Respect of privacy

The right to privacy is one of the basic principles of living in a democratic society. In a research study this means that participants can control the access a researcher has into their personal information. Furthermore, it means that respondents must give their informed consent in giving information before and during the data collection phase, keeping always in mind that their participation is absolutely voluntary (Sales and Folkman 2000; Gray 2013).

Issues of anonymity and confidentiality refer to the de-identification of participants so that their real names are not used. In this sense, it is essential that researchers obtain informed consent, remove identifiers, use codes and permanently delete data upon request. These principles are strongly linked to data collection and management. Specifically, they look at to how the data are stored and what kind of controls are in place to prevent any external access (Ntseane 2009; Gray 2013). This research has outlined the respect for privacy and anonymity in the informed consent carrying these principles throughout the whole process and afterwards. Deception was always avoided, presenting the research for what it was in reality.

Both the elicited paper-based and digital data were securely stored locally in spaces specifically allocated by partners. Electronic files were password-protected and antivirus software installed in the computer to ensure information technology security. Back-ups of the data were performed on a regular basis.

3. Minecraft Guinevere Summer Camp

The GUINEVERE project partners invited friends and colleagues to join the GUINEVERE Minecraft server during the 2018 summer holidays. The idea was to see how people and, in particular, young people would engage with the platform focusing

on what kind of activities they would prefer, the relationship and level of cooperation with other players, the level of motivation when using this platform as well as the level of creativity and problem solving skills. As indicated in the introduction, this served as phase one of the pilot test event which will be followed by a longer pilot test event carried out in a UK primary school. The following paragraphs outline details in relation to the timeline of the Guinevere Summer Camp sessions and of the players who took part to it.

3.1 Timeline and Participants

The Guinevere Summer Camp lasted one month, starting in August 2018 and finishing in September 2018. The Summer Camp was divided into 13 sessions which lasted roughly

Sessions	Participants/Players
Day 1: 2/08/2018	1 child: Participant 1 (fluent in English and Czech) 5 adults (as support)
Day 2: 3/08/2018	2 children: Participant 1 (fluent in English and Czech) and Participant 3 (Chinese speaker, fluent English) 1 adult (project partner as support)
Day 3: 4/08/2018	2 children: Participant 1. and Participant 3 1 adult (project partner as support)
Day 4: 5/08/2018	1 Visiting teacher + 1 student 1 children: Participant 1 1 adult (as support)
Day 5: 9/08/2018	2 children: Participant 2 (German speaker, learning English) and participant D1 3 adults (2 project partners +1 adult as support)

Day 6: 10/08/2018	2 children: Participant 2 and Participant 1 3 adults (2 project partners, 1 adult as support)
Day 7: 14/08/2018	1 child: Participant 1 2 adults (project partners as support)
Day 8: 15/08/2018	2 children: Participant 1 and Participant 3 2 adults (project partners as support)
Day 9: 18/08/2018	2 children: Participant 1 and Participant 3 1 adult (project partner as support)
Day 10: 19/08/2018	1 child: Participant 1 1 adult (project partner as support)
Day 11: 20/08/2018	1 child: Participant 1 1 adult (project partner as support)
Day 12: 21/08/2018	1 child: Participant 1 2 adults (project partner as support)
Day 13: 24/08/2018	1 child: Participant 3 2 adults (1 project partner and 1 adult as support)
Day 14: 25/08/2018	1 child: Participant 3 1 adult (project partner as support)
Day 15: 01/09/2019	1 child: Participant 1 1 adult (project partner as support)

Day 16: 02/09/2019	1 child: Participant 1 1 adult (project partner as support)
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Table 1 Sessions and Participants Guinevere Summer Camp

Day 1: 202/08/2018

This was the first session of the GUINEVERE Summer Camp. The participants of this session were 1 child, Participant 1 and 5 adults among which were project partners offering their guidance and support in world. Participant 1 is a Minecraft experienced player and she speaks fluent English and Czech. She was informed about the GUINEVERE project and the Summer Camp sessions and agreed to take part to this field testing event. Participant 1 joined the GUINEVERE server and within 20 minutes she had started mining, made her first set of tools and some armour. She spontaneously decided to build her house on a tree (Fig. 1). She immediately started cutting down trees for the wood and building things she needed instantly showing excellent crafting skills. It is important to say that she had started up on new sims without any resources many times previously. She made a ladder up into the tree and started to work out from the centre. She created a boat shaped floor and started building up the walls. She soon realised that some people present were in creative mode so asked repeatedly for the resources that she required rather than obtaining them herself. She appeared very motivated and wanted to complete the first floor very quickly. Project partner 1, tried to get Participant 1 to go to the factory to make her lime green glass. She followed Project partner 1 advice and started building the glass panes but, while in the process, Participant 1 said that she did not know how to colour it. Project partner 1 and the other project partners told her how to proceed but she was not interested in the slow process, she wanted instant glass panes. They were added to a chest for her and she carried on building her house for a while. Participant 1 build an amazing 2 stories house with a rooftop garden where she grows vegetables. The house is built on a tree and can be accessed through a stair. Underneath the ground, Participant 1 built a secret house where she is doing enchantments and preparing potions and where there is the access to the Nether portal. An excerpt of Participant 1's house can be viewed [here](#).



Fig.1 Participant 1's house with green glass panes

After about 40 minutes she was bored with that and went off to help another adult participant build her house. Participant 1 went off again and started exploring finding a Mushroom Island, a place that project partners never found in all the hours spent exploring for the different places.



Fig.2 Mushroom island (found by Participant 1)

Participant 1 kept exploring and while doing that she was mining and gathering material (even on her first evening she has a chest full of resources ready to use for various events).

Day 2: 03/08/2018

In this second session of the GUINEVERE Summer Camp, together with Participant 1, another child joined the session. He is here named Participant 3 and he is a 10

years old native Chinese speaker with fluent English. He learnt English largely from playing Minecraft. He was informed about the GUINEVERE project and the Summer Camp sessions and agreed to take part to this field testing event. Participant 3, as well as Participant 1, is an excellent Minecrafter!

Participant 1 was in Minecraft in the morning, before the session had started. She had already been exploring and had found obsidian blocks among other things. Once the session started, Participant 1 expressed her interest in making a portal and, within minutes, she created it but could not get it working. Participant 3 joined her and got it working.



Fig. 3 Participant 1 building a portal

Participant 3, on his side, wanted to improve the portal, so he made switches to switch it on and off. The activity presented a trial and error scenario characterized by lots of determination and persistence as shown in this [excerpt](#). They continued to explore but they got bored after 10 minutes. After this, they teleported to the playground and played on the roller coaster where Participant 3 added four diamond dispensers.



Fig. 4 Roller coaster in the playground area

Participant 1 and Participant 3 teleported then to one supporting member's house and decided to play with magic items. By then, they had been put in creative mode by project partners taking part in the session. Being in creative mode, allowed the children to avail themselves of different resources so they could build whatever they want. Participant 3 instantly created magic colour changing sheep and next, he built a magic armour dispenser, so, if any player walked into a little room he/she would have been covered with a magic armour. Participant 3 gave every player magic tools. He called them *God tools* while he promptly spawned all sorts of mobs to prove they could be killed instantly by the tools he provided. Eventually both Participant 3 and Participant 1 seemed to have exhausted the magic tools – or at least Participant 3 was curtailed by the adults present- so Participant 1 decided to build a safe house under water for supporting project partner 2.



Fig. 5 Underwater house built by Participant 1

Participant 3 and Participant 1 built the space presented in Fig 6. Participant 3 added a secret entrance, and very soon discovered that it lead to a mine.



Fig. 6 Space skilfully created by Participant 1 and Participant 3

Adults and children played spent about 30 minutes or more exploring the mine finding about 5 spider spawners, three dungeons, a zombie spawner and a skeleton spawner. Several of these were added as teleports to the game so that anyone could go and visit any time they like. Also new bits were added to the chests that were found. The spawners, presented in Fig. 7, were all very similar. Torches were added by players to stop them spawning.



Fig. 7: Spawners and torches

Participant 1 and Participant 3 had then a potions party where they threw masses of the enchantment everywhere - invisibility potions, protective potions etc... - so that they could walk into the lava and survive. Participant 1 continued to play after the

session was over. She worked on the safe, secret, underwater house adding decorations and planting in the garden. She spent more than 3 hours on Minecraft each day.

Day 3: 04/08/2018

Day 3 started with Project partner 1 accessing the server to take few photos before the session. Within minutes both Participant 1 and Participant 3 joined in. Project partner 1 told them that she did not have the time to play at the moment and showed them how to get into survival mode and get the fly command. Participant 1 and Participant 3 asked to be put into creative mode but project partner 1 responded negatively. Project partner 1 left them a chest of netherwort block (the netherwort is a grow-able plant that can be found in a world named the Nether), netherwort brick, netherwort fence and cobblestone to play with. Participant 3 was really struggling to get access and kept being thrown out. When project partner 1 returned later in the day Participant 1 had made a shelter in the Nether (fig. 8 and 9). Participant 1 built a very complex space organized in different levels linked through stairs. There are lava streams coming down to a lava lake in the lower level of the shelter as well as blocks skilfully placed to block gasses from coming out the ground. An excerpt of the shelter built in the Nether by Participant 1 can be viewed [here](#).



Fig. 8 Participant 1's shelter in the Nether



Fig. 9 Participant 1's shelter in the Nether

Participant 1 returned to the game during the evening, she spawned horses in the Nether, gave them all armour and she created a route around the area for horses to ride. Later she simply played, enjoying the railway. She joined project partner 1 and started mining there.

Day 4: 05/08/2018

Supporting project partner 1 showed a visiting teacher and her student around the world. Participant 1 was in world too. She had built a safe house below the playground that was attached to the portal that she built. In the fig.10 below, details of the safe house can be seen. Specifically, there are water dispensers full of water, pressure plates through which the main door can be opened.



Fig. 10 Participant 1's safe house, water dispensers and pressure plates

As shown in Fig. 11, Participant 1’s underground safe house has a display of heads behind glass, a beautiful floor, lots of chests full of all sorts of items and an enchanting tables. She had put enchantments on books to make them open and turn pages (fig. 12). There is also a secret door which opens onto a space where Participant 1 is growing netherwort. It is an amazing space she created using tools and discovering options (i.e. growing netherwort) which whom project partners were not aware of. An excerpt showing Participant 1’s underground house, can be viewed [here](#).



Fig. 11 Participant 1’s safe house



Fig. 12 Participant 1’s enchantment on books

Day 5: 09/08/2018

During the day 5 session of the GUINEVERE Summer Camp, together with Participant 1, another child here named Participant 2 joined the session. Participant 2 is a 13 year old and comes from Germany. She speaks English at elementary level and, because of this, she was a little shy at the start. However, she gained confidence and started communicating very well during the session. Participant 1 and Participant 2 spent about 2 hours playing together.

At the very start the two girls played individually. Participant 1 put out several iron gollums (utility mobs that defend villagers from other mobs and attacks) to protect everyone and then built two chicks as shown in fig. 13 and 14 below.



Fig. 13 Participant 1's chick 1



Fig. 14 Participant 1's chick 2

The two girls started then to play together breeding some horses in a small field. The field had to be expanded about 3 times as the number of horses increased (fig. 15).



Fig. 15 Field with horses

Participant 2 started building a tiny railway powered by redstone, then got a book and wrote a message for Participant 1 asking if they should have a building competition offering three suggestions: a crazy house, a normal house or a beach house. Participant 2 chose to build a crazy house (fig. 16, 17 and 18) and Participant 1 a beach house (fig. 19 and 20)



Fig. 16 Participant 2's crazy house 1



Fig. 17 Participant 2's crazy house 2

It started to rain and Participant 2 decided to add an open-air shower (fig. 18) where she added two signs: "I Schower / Please don't look to me". Project partner 1 guided Participant 2 in reflecting about the spelling of the signs and what she meant to say. In her second attempt Participant 2 wrote the sign correctly: "I am having a shower, please don't look at me."



Fig. 18 Participant 2's open-air shower

Meanwhile Participant 1 started to build a beach house, creating the beach and swimming pool first followed by a small house (fig. 19 and 20).



Fig. 19 Participant 1's beach house (beach and swimming pool details)



Fig. 20 Participant 1's beach house

The supporting project partner 2 was building a lighthouse with a glass sphere in the sky. Participant 1 joined supporting project partner 2 and built a glass sphere which she filled with water (fig. 21)



Fig. 21 Participant 1's glass sphere

During the session, Participant 2 relaxed and became much more chatty though she did not understand some of what was being said. She extended her tiny railway into an up and over hill one (fig. 22 and 23) while Participant 1 took the roller-coaster idea and worked - often alone - to extend it to a 3.5 minute run.



Fig. 22 Participant 2's roller-coaster 1



Fig. 23 Participant 2's roller-coaster 3

Day 6: 10/08/2018

Participant 2 and Participant 1 were already playing in-world before the session started. Supporting project partner 1 as well as 2 project partners were present during the session. Participant 1 continues to work on her roller coaster and completed it by linking back to Participant 2's build. She created an amazing roller-coaster and the

ride is 3:20 minutes long going underground as well as up high in the sky. The full ride and the fantastic roller-coaster can be viewed [here](#).

Supporting project partner 1 built a luge track and both Participant 2 and Participant 1 joined and experienced it. This excerpt shows the [ride](#).

Participant 2 replaced her crazy house with a new house, the roof was made with ice. She then lit a furnace and the ice started to melt. She added an ice floor and a tiny rail circuit. Participant 2 soon decided that she wanted to redesign the house built for project partner 2, a project p and destroyed the ice floor.

Participant 1 seems to adore chickens and she has a live one who is about 3 weeks old now and it follows her everywhere. She has also kept working on the crazy house adding disco beacons there (fig. 24). An excerpt of Participant 1's crazy house can be seen [here](#).



Fig. 24 Disco beacons, crazy house

Participant 1 kept building and playing outside the session times and she built extensively before the next session. In fig.25 another of her amazing creations: a magic black ball shape with a white rectangular inset – the player asks it a question and it gives an answer on paper.



Fig. 25 Participant 1's Magic black ball

During the days between sessions, Participant 1 had found a cave in the mountains and had turned it into a house which is clearly signposted “Empty house for use” available to anyone who wants to use it. She has populated it with moving snowmen who apparently will attack mobs. Participant 1 later taught project partner 1 how to make moving snowmen.



Fig. 26 Participant 1's empty house for use 1



Fig. 27 Participant 1's empty house for use 2

Finally, Participant 1 had found and named a new village (Seaport). She has built a fence around it to protect the villagers. She had also found a mineshaft (details in the following session) which she wanted to start mining.

It is important to highlight regarding Participant 2 that when she joined the sessions she did not want to leave. She is a very shy girl who finds it difficult to talk to people in real life however, she was talking to people in Minecraft - even when they were talking in a foreign language! Regarding Participant 1, she spent a lot in world creating and building regularly. She is a very shy girl too, who, as Participant 1, finds it difficult to engage with people in world however, she is completely at ease when interacting with other players, both adults and children in Minecraft.

Day 7: 14/08/2018

Project partner 1, project partner 2 and Participant 1 started the session mining together in the mineshaft found by Participant 1 (fig. 28). It was a very rich mine and they found spawners, ores and gems.



Fig. 28 Mineshaft found by Participant 1

Participant 1 went then to complete a mushroom cafe which project partner 1 had started and continued mining mushrooms after the session was over (fig. 29)



Fig. 29 Mushroom cafe

Day 8: 15/08/2018

It is midday and Participant 1 and Participant 3 are playing with some enchanted speed enhancers. During the evening project partner 11 was working on her railway and Participant 1 joined and helped her. She then played with redstone and making some flashing lights.



Fig. 30 Project partner 1's railway

Participant 1 made another chick in the sky and project partner 1 copied it and pasted it onto the greenhouse roof.



Fig. 31 Participant 1's chick

Afterwards, Participant 1 went to the playground to a piece of flat land and started playing with the musical blocks, linking them all with redstone to make a tune.



Fig. 32 Participant 1's musical blocks

Day 9: 18/08/2018

Both Participant 3 and Participant 1 were in-world during the morning. Participant 3 built an aeroplane which the two of them played with. An excerpt of this can be found [here](#). They discovered that by riding into a portal on horses they could access a huge flat land, part of the Nether but allowing free building and experimentation! Participant 3 chose to build a non-stop redstone creation (fig. 33).



Fig. 33 Participant 3's non-stop redstone creation

They also discovered a new way of powering things with leaves but it only works on the newest version of Minecraft.

Day 10: 19/08/1980

Participant 1 joined the session and showed project partner 1 the aeroplane and the flatland in the Nether. They added lights to this dark flat land to make building easier. Afterwards, Participant 1 went off to explore the Nether and found a fortress and it was discovered that Nether fortress provide valuable loot and are the only places where blazes and wither skeletons spawn naturally. Nether fortresses are also the only places where netherwart generates naturally. In this [excerpt](#) can be found an overview of the Nether fortress. Participant 1 found a Blaze spawner that in order to stop it spawning needs lights in four blocks in every direction including upwards and a light level above 11 (fig. 34). This had to have a glowstone roof to stop it.



Fig. 34 Blaze spawner

Participant 1 joined project partner 1 in a mine and they visited a new town called Kevintown because Participant 1 is not a member of the town group yet she so cannot do anything there.

Day 11: 20/08/2018

Participant 1 joined the session and she created a trading station in the clouds (fig. 35 and 36)



Fig. 35 Participant 1's trading station 1



Fig. 36 Participant 1's trading station 2

Day 12: 21/08/2018

Participant 1 joined the session and she expressed the desire to see a Woodland Mansion . She had obtained a map for a second one and all together tracked that one down and found and named it ready to be explored the next day.



Fig. 37 Map of a Woodland Mansion

Day 13: 24/08/2018

During day 13 only Participant 3 joined the session. He made a machine to spawn creepers (creepers are hostile mobs who silently approach players and explode shortly after coming within 3 blocks of their targets) which are harmless on our server so give good practice for fighting mobs. Later on Participant 1 and project partner 1 found them and killed them. Supporting project partner 1 came in to make the build safe. Participant 3 added a very safe second build. He provided an incredible protection system whereby if anyone disturbed it, all hell would be let loose. What he did not bank on was the creepers from the first building wandering very close by. Later all the shulkers (box-shaped hostile mobs) were killed by project partner 1 and Participant 3. An excerpt of Participant 3's Shulker build can be viewed [here](#).

Day 14: 25/08/2018

Participant 3 joined the session and an incredible working elevator he built was proudly demonstrated. That was part of his airport complex (unfinished as he was told to go to bed at 1am)! An excerpt of Participant 3's lift can be viewed [here](#).



Fig. 38 Participant 3's elevator

Day 15: 01/09/2018

Participant 1 joined the session. She had been working on creating a mini zoo. She continued her exploration and building activities

Day 16: 02/09/2018

During this session Participant 1 continued to build and explore. Specifically, she built four new rooms for her crazy house. The crazy house she created is an environment where secret spaces, hidden rooms, enchantments and incredible design ideas and activities can be viewed and experienced (see excerpt 9 to view Participant 1's crazy house).

4. Guinevere UK Primary School

The second phase of the pilot testing was conducted in a UK primary school. The school organized a “French through Minecraft” club for children from years 3 to 6 and 7 to 11. The aim of the club was to introduce specific topics each week and practice the target language while completing activities in Minecraft. The participants had 1 computer available each (11 Minecraft licences were distributed). The lessons were recorded by the GUINEVERE team and stored in a password protected space. The sessions started in October 2018 and finished in December 2018. During the sessions, together with the participating children (ranging from 7 to 11 in number), there were one teacher/facilitator (computing manager) from the school working in room with the children and 2-3 adults from the GUINEVERE team supporting in world. It is important to say that the teacher/facilitator guiding the students in the school was not a French teacher but together with all the adult participants was using the target language (at an elementary level) to teach and reinforce vocabulary related to the topics covered during the sessions. Each session was carefully organized and outlined in lesson plan documents (examples of the first 3 lesson plans can be viewed [here](#)) and participants were instructed by the teacher about the session aims before entering Minecraft. During the sessions, children availed of handouts related to the topic introduced and, at the end of each session, a booklet was created and shared by a GUINEVERE team member outlining what children have achieved in each session.

4.1 Timeline and Topics

Sessions	Topics
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Week 1: 30/11/2018	Family: learn key vocabulary related to the family
Week 2: 06/12/2018	Body parts: learn key vocabulary related to body parts
Week 3: 13/12/2018	House: learn key vocabulary related to the different parts of the house
Week 4: 20/11/2018	Our houses: reinforce and expand vocabulary and constructions related to the house topic
Week 5: 27/11/2018	Barns and Animals: learn key vocabulary related to the animals and their environments
Week 6: 4/12/2018	Our houses and animals: reinforcement and expand vocabulary and constructions related to the house and animals topics

Table 2 Sessions and Topics Guinevere UK Primary School

Week 1: 30/11/2018

This is the first week of the “French through Minecraft” club in the UK primary school. There were 9 children ranging from year 2 to year 6 taking part to the session. Unfortunately, during this first session, the schools’ microphone was not working so the children had no sound in-world. The topic of this first week was Family and, specifically, children were guided into the discovery and practice of the French vocabulary used to describe family members. Their activities in Minecraft focused on creating and building their own family using blocks on the ground. Children were shown first pre-created faces on the ground near entrance to teleport stores for ideas and inspiration. After having built their family members, children had to label each member with French signposts. An extension of this activity involving higher ability and older children, focused on creating clothes for family and label clothing with French signposts.

It is important to say that children had at their disposal a handout in French where key words in relation to family members, numbers, colours, months, days of the week as well as greetings were listed. This allowed the teacher to guide them into the French use while providing participants with a paper supporting tool helpful for the completion of the activities on Minecraft.

Children accessed without major issues Minecraft GUINEVERE Server and move to the '/teleport stores' area for practical activity. The children were playing in creative mode. They started right away to interact with the GUINEVERE team members available in-world through the chat option, writing to them in English. As well as with the adult members, the children promptly started using the chat box to communicate among themselves.

In the allocated space on Minecraft divided into 4 sections (England, Wales, Ireland and Scotland), children started to build faces representing their family members (see fig. 39).



Fig. 39 Space allocated for the “My family” activity

As shown in the following examples, children created very interesting characters enjoying the building throughout the session. Participant 4 (year 4), one of the participants, built characters representing his whole family using the same colours but different shapes and sizes and choosing different colour to represent his dog. Signposts were allocated in front of each character (see figures 40 and 41).



Fig. 40 Participant 4 family 1



Fig. 41 Participant 4 family 2

Participant 5 (year 6), another participant, placed her family members in an enclosed space. She personalized them with very specific features and added to each one of them specific signposts (fig. 42)



Fig. 42 Participant 5 family

Participant 6 (year 4) built not only the face but also the entire body of her family members, as shown in fig. 43.



Fig. 43 Participant 6 family

A member of the GUINEVERE team, at the end of the session, created a booklet with pictures and descriptions in the target language of what each participant has created. The booklet for the first week can be viewed [here](#) and it was welcomed by all the participants eager to share it with their peers and family members.

Unfortunately, during the session, there was no use of the French language despite the fact that the members of the GUINEVERE team available in world were interacting via chat with the children in the target language.

There was also an episode of grieving that happened at the end of the session. The episode can be viewed [here](#). A member of the project had to kill all the animals, mobs

and other creatures created by one of the participants with the aim to disturb and destroy the environment. This is a very challenging and upsetting example of what happened in Minecraft creative mode.

Week 2: 06/12/2018

In the second week of the “French through Minecraft” club the microphone issue was solved hence the participants could interact both in speaking and writing. There were 10 children taking part to the session and the focus of the latter was to work on the figures created representing the family members and labelling them indicating the different parts of the body. A handout listing the body parts in French was distributed to the participant as a reference and support for recognizing the vocabulary and the correct spelling. Once in Minecraft, participants had to find the area where they created family members the previous week and, once logged in, they found the area right away. The session started with one of the participants interacting in English with project partner 1, one GUINEVERE team member, and saying that he has created a Youtube channel dedicated exclusively to Minecraft..

Members of the GUINEVERE team available in-world continued the interaction with the children using the French language however, the children, although engaged by the language used, responded in English. An excerpt of this can be viewed [here](#).

One of the children, while labelling his figure, asked if there would be any prize after the completion of the activity as this [video](#) excerpt shows.

Many of the participants worked on their task of labelling the bodies however, some of them focused more on the building aspect creating from scratch new figures. The teacher available in class as well as the GUINEVERE team reminded repeatedly to the students what the purpose of the session was explaining that participants had to focus on labelling first and then, once finished, they could focus on building and making their figures as complex as they want. This [excerpt](#) and fig. 44 below shows an example of a figure with a good number of labels written and placed correctly.



Fig. 44 Participant 4's figure

Participants, instructed by the teacher and the team, put signposts at the bottom of each character created indicating the name of the creator himself/herself.

Children were very much eager to build, to create complex and very ingenious 3D figures. The French used was almost absent except for the greetings at the end of the session when participants used it in response to the salutation of the GUINEVERE team.

A booklet with a summary of the bodies created and labelled by the participants can be viewed [here](#).

Week 3: 13/12/2018

During this week session, children were working in three groups of three members. The focus of this session was reflecting and using French vocabulary to describe places where participants lived (houses, apartments etc..). A handout with a list of vocabulary related to the house, the phonetic pronunciation and the English translation was distributed among participants. Once logged in in Minecraft, participants had to teleport to a sample house built by the GUINEVERE team. They managed this without any issue. Participants arrived to the sample house (fig. 45) , they explored it and successfully and collaboratively added labels written in French to the different rooms and furniture pieces of the house.



Fig. 45 Sample house

This is an [excerpt](#) showing the labelling activity in the sample house. The children were much more excited this week, using some French words and a dictionary to look up words for labelling the house. They greeted the GUINEVERE team as they arrived writing *Salut* in chat. They loved the sample house and spent far longer than expected there.



Fig. 46 Labelling in the sample house 1



Fig. 47 Labelling in the sample house 2

After having visited and labelled the sample house, children started to build their own houses. The GUINEVERE team have set three new building plots, one for each group all with teleports to and from the sites. Specifically, in order to access these new building plots, participants had to step on a pressure plate that gave them access/teleport to the allocated plots named respectively Rue du Pont, Rue Blanche and Rue Bois Sombre. Three children per plots worked very efficiently in the construction of houses. The collaboration was very high for the completion of this task. This [excerpt](#) shows the very creative houses participants were collaboratively working on. Undoubtedly, all these houses were going to be on a grand scale featuring one huge pink house that had an underground level and a house skilfully build with diamond and obsidian blocks. The children did not want to finish building and, above all, they did not want the session to be over. This session have been extremely engaging for them and, compared to the first two session they used the target language much more. Some children will be using the area during breakfast club (another possibility offered by the school to use Minecraft for learning). Participants have been informed also that, in accordance with their parents, they can continue to

build outside the school club. The server has been changed to Survival mode to accommodate that.

Week 4: 20/11/2018

During this week children, divided in the same three groups as in the previous week, continued to work on their houses, building together with great excitement. As for the previous session, they had available handouts listing French vocabulary related to homes, rooms and furniture as well as their English translation and phonetic pronunciation. The accessed the allocated plots without any problem. The children were very inspired and continue to work on building very creative houses. This [excerpt](#) and the figures below (fig. 48, 49 and 50) shows the work that 3 children undertook in the plot named Rue Bois Sombre. Together with a very grand house, they built a greenhouse where they grew vegetables, an enclosed space where they put animals and a lovely entrance full of colourful flowers.



Fig. 48 Rue Bois Sombre house

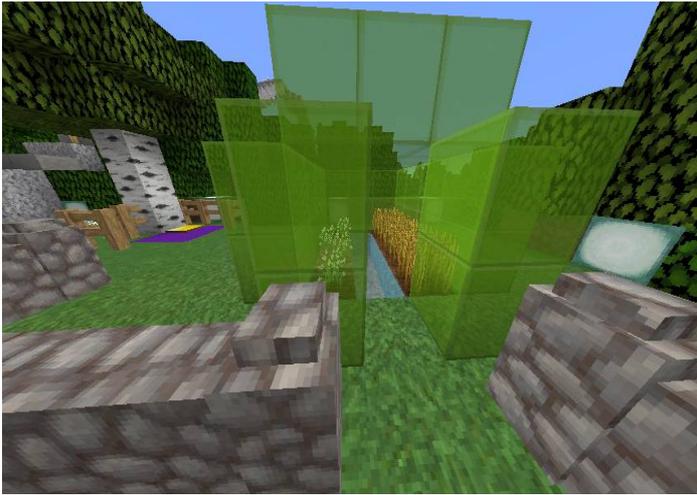


Fig. 49 Rue Bois Sombre green house



Fig. 50 Rue Bois Sombre entrance

Figure 51 shows another example of a beautiful house built in the Rue Blanche plot by three other participants.



Fig. 51 Rue Bois Blanche outside and inside

Children enjoyed the session and the building very much and, one participant at the end of the session expressed how much he loved Minecraft however, there was not much evidence of using French this week. All the GUINEVERE team available in world kept using French (both in writing via chat box and in speaking) for greetings and simple sentences related to the task such as *Je fais une porte / je faie la fenêtre / je construis la maison* etc... but none of the participants seemed to pick up on the language.

The booklet with more examples of the houses built by the children can be viewed [here](#).

Week 5: 27/11/2018

This week session saw a smaller number of participants, seven in total. Unfortunately, there were problems with the microphone and, during the session, students did not have voice to communicate with the GUINEVERE team available in world hence the communication happened only in writing, in the chat box.

This session focused on learning and practicing French vocabulary related to animals and barns. As for the other sessions, handouts focusing on the vocabulary covered was distributed to the students.

Once logged in, participants were asked to teleport to the barns, an environment that has been previously created by the GUINEVERE team. They arrived and started to explore the barn. The task children had to complete involved adding signpost (with the name of the animal and the student who wrote the sign) to the paddock inside the barn where the animals were located and also outside where more animals were placed. This [excerpt](#) shows one participant working successfully at the completion of the task. Together with the name related to the animals, some students added entire sentences where the name and the type of animal selected were described (fig. 52).



Fig. 52 Labelled animal

Once the labelling in the barn was finished, participants moved to the building plots where their houses were located (Rue Blanche, Rue Bois Sombre and Rue du Pont) and, guided by the teacher and the GUINEVERE team, started to build their own barns. An excerpt of barn building can be viewed [here](#). The use of the French language this week was limited to the writing due to the microphone issues experienced in the school. Students successfully completed the task indicated and wrote and assigned the correct names and, in some cases sentences, to the related animals. The booklet with a summary of what has been built and completed by the participants can be viewed [here](#).

Week 6: 4/12/2018

During this last session, participants (6 in total) were in survival mode. The microphone was working fine this week. The focus of this session was to complete the houses and barns in the allocated plots adding animals to the latter while reinforcing the vocabulary related to the topic. A chest full of tags and leads was placed by a member of the GUINEVERE team so that participants could take those tools and bring animals to the barns they have started building the week before. Children were, as in the previous weeks, very much engaged with the tasks and challenged by the zombies and other characters attempting their lives. This [excerpt](#) shows one of the participant collecting animals and trying to bring them over the bridge to the barn next to his house. Children

successfully managed to bring animals to their barns and added signposts in French accordingly as shown in figures 53 and 54.



Fig. 53 Barn in Rue du Pont



Fig. 54 Barn in Rue Bois Sombre

The French used in this last session was mainly for greetings and the writing of the signposts for animals. The booklet for this last session can be viewed [here](#).

5. Results and evaluation

This paragraph discusses and summarizes the findings of the GUINEVERE project pilot testing phase. As outlined above, the pilot testing was organized into two parts namely the GUINEVERE Summer Camp and the GUINEVERE UK Primary School.

Chronologically, the Summer Camp was held before the UK Primary School experience. The children participating at the two pilot test events were different whereas the members of the GUINEVERE team available in world were the same. The two events had differences in terms of participants and organization of the sessions. Firstly, the number of children involved in the UK field test was larger (11 participants) compared to the ones involved in the summer camp (3 participants). Secondly, participants from the UK school had an IT teacher available in class throughout all the sessions who, together with the GUINEVERE team members, prepared the lesson plans and guided the children in completing the allocated tasks. During the summer camp, children met in world the team members and were guided by them in the completion of the different activities. Finally, it is important to highlight that some of the primary school participants were younger (7-11 years of age) than the participants taking part at the summer camp (10-11 years of age). The two experiences proved to be extremely meaningful as they provided valuable feedback so that different processes and elements can be revised and improved during the field test phase.

The summer camp pilot test highlighted many aspects in terms of motivation, learning, communication and collaboration among participants. A first element that appeared evident since the start was that participants were not interested in the slow process. They prefer to get instantly the things/tools they needed instead of being instructed step by step on how to proceed in order to get them. This happens especially when they were guided in the completion of specific tasks. As a matter of fact, when they had more freedom (for example when participants expressed their interest in making a portal) they worked endlessly with a lot of determination and persistence till they achieved what they aimed for. This offered often crucial examples of trial and error scenarios.

Children were extremely engaged with Minecraft throughout the summer camp, they spent hours building, exploring different places and finding also places that the GUINEVERE team members were not aware about. They were so engaged that they always did not want the sessions to be over and often continued to play outside the session times. Two of the participants were particularly shy, they found it difficult to talk with people in real life, however, they did not have a problem interacting with other players in Minecraft, may they be adults or children.

As highlighted in the various images and excerpts above, participants built very complex constructions showing a high degree of creativity, digital skills and collaboration being some of the activities the result of a fruitful and very natural collaboration among children.

Regarding the language outcomes, English was the language used during the sessions and it was the target language for 2 of the participants. One of them, being fluent in English, stated that he learnt the language largely from playing Minecraft. Another participant spoke English at an elementary level and because of this, she was a little shy at the start however, she gained confidence and started to communicate very well as the summer camp went on.

The pilot testing in the UK primary school outlined a variety of elements and scenarios. As for the summer camp, participants were very engaged with the game throughout all the sessions sometimes protesting when the sessions were over. The dedication to the game was evident when one of the participants said that he had a Minecraft YouTube channel that he created himself. Participants welcomed the possibility to join the server (set in survival mode) outside the French through Minecraft club hours, in accordance with their parents.

During the sessions, all the participants could always log in and access the different areas of the game indicated by the GUINEVERE team without any issues. They explored and built very successfully, creating, in this case too, amazing and complex structures.

During this pilot testing, the target language was French, being those sessions part of the French Minecraft club. The use of French was supported and facilitated by the teacher available in class, the GUINEVERE team available in-world and the handouts distributed among participants. Children got used to greet in French at the beginning and at the end of each session and completed the different tasks related to vocabulary acquisition very successfully (writing names or short sentences in French in different environments/characters allocated). Aside from this, the communication was in English: children were communicating among themselves and the adults in English and they were writing in English also in the chat box.

Collaboration was central, especially in the sessions dedicated to house and barns building. Participants were divided into small groups (3 per group) and they collaborate very effectively and creatively to the creation of their houses.

At the beginning of the field testing there was an instance where the request of a prize was raised from a participant. As part of the rewarding system, project partner 1 created each week a booklet where pictures and details of all participants creations were presented. This offered them the opportunity to hold and share the results of their work on Minecraft while bringing it outside the virtual world. There was a very challenging and upsetting episode of grieving that happened in the first session that was discussed among the participants. Other similar episodes were not replicated in the remaining sessions.

Conclusions

Through the pilot testing events outlined above, several final remarks can be presented:

- Minecraft prove to be a very engaging platform for the participants being an environment where children love to spend time outside the allocated sessions.
- In order to collaborate and interact it was noted that children learn best when communicating through a lingua franca. As outlined in different episodes, learners with the same language tend to use their first language when interacting.
- The activities conducted on Minecraft allowed participants to work on their collaborative, communicative (especially when using a lingua franca as means of communication), problem solving and digital skills while having the opportunity to express their creativity.
- A rewarding system was perceived as important, especially when participants were guided in the completion of specific tasks. In this respect, a product like

the booklets created during the sessions was particularly welcomed as they can be brought and shared outside the virtual world being also an artifact participants can hold on to.

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