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Features



Implementing Minecraft in the classroom

Tracy Broadbent discusses the potential benefits to incorporating game-based learning in the classroom, as well as discussing ideas on how teachers can enrich a wide range of subjects with this approach.

Games in the classroom are nothing new. Getting children involved in an active learning process captures and maintains their engagement, while at the same time getting them to see topics and activities in a different way. With the increase in the use of technology in classrooms, it's hardly surprising that video games have started to appear in the learning environment.

One such game is Minecraft, a three-dimensional "sandbox" world in which players can explore landscapes, create structures and go on adventures using tools and square-shaped blocks to build and change the environment around them. The massively open nature of the software means that it has very few limitations in terms of its learning potential. But how exactly can Minecraft be implemented as part of the wider curriculum?

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Of course, with all games in the classroom, there is always the concern that pupils will find themselves distracted and going off task. Indeed, there has been a great deal of debate around the idea that consistent attempts to make learning more fun will prevent pupils from engaging with any subsequent, more challenging activities that require extra cognitive effort.

On the flip side however, there is plenty to be said for finding ways for pupils to apply their knowledge practically in a real-life situation, and it is this in which Minecraft excels. With the ability to recreate scenarios and events that require the pupils to think

through potential issues and implement solutions, this balances the engagement factor of using the game with cognitive exercises. More than anything, this approach gives them ownership in creating something for themselves: a process which is lost in a number of subjects in various parts of the curriculum.

Take mathematics, for example. The protagonists of the game, Steve and Jane, will often find themselves in unknown areas and must build a shelter in which to keep themselves safe from the monsters that roam the world at night. A maths activity that could be set from this is working out the scale and measurements of blocks in order to build a basic 'house' with walls and a roof. You could even ask them to work out how many blocks would be needed to create a shelter with 5x5 dimensions. The pupils can think out their ideas on paper before implementing their solution in the game to show their work.

In terms of literacy, the ability to roam free through the landscape can be the perfect catalyst for creative writing opportunities. The pupils might discover an interesting cave filled with monsters and treasures to be found; this experience could lead to writing descriptively about the way they interact with the game. For example, you can set particular tasks where pupils take on the role of Steve and Jane and talk about what they can see and how they feel.

The potential for cross-curricular applications are huge. Minecraft has been used extensively already in the teaching of computing, with blocks called redstone being used as a power source to demonstrate logic gates, or even by altering the code itself to make changes within the game world - but the opportunities don't end there.

There are creators around the world who have developed models of historical landmarks which are available through MinecraftEdu, the software we used to develop our own lesson ideas. The diversity within the landscape, including forests, plains, beaches, mountains and oceans, provides an excellent platform for geography, describing different ecosystems and the creatures that live there. Science can be addressed in a number of ways, for example, creating new things



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from various different elements through the “crafting” function, such as turning sand into glass for windows in their shelter. There are even opportunities to incorporate music by creating sequences of ‘note blocks’ to develop patterns and melodies!

The experience around these activities can also be incredibly beneficial as they can help in developing a number of personal learning skills such as critical thinking and problem solving. If a tool isn't working, what's the possible reason for this? Why does this particular block act in a different way from others?

In addition, because the programme can be used across the whole school network, pupils can work together on projects and develop their communication and team building skills. Each child will have an individual set of characteristics and talents that they can bring to an activity, allowing everyone to make their own unique contributions in finding the solution. The ability to share their work with peers, teachers and even parents is a fantastic boost of confidence and can be saved for use in evidencing work and outcomes.

Setting up the Minecraft environment safely within a school network can be a concern for teachers in terms of online safety. Pupils need to receive a suitable level of online safety training before and during their time on the servers, teaching them what to be aware of when interacting with other people on the platform, as well as how to behave sensibly and appropriately.

Adapting to new technologies and methods of teaching is crucial in developing a comprehensive curriculum that inspires

children to think differently and prepare themselves for the challenges that they may face in the world of the future.

The landscape of learning is ever-changing, and the number of creative and innovative resources that teachers have access to increases year-on-year, with a whole new wave of technology and teaching tools set to arrive in 2016. We've already seen Minecraft take off in the last few years, but with its intuitive mechanisms and open-world potential, this can only become more and more popular as part of a diverse and engaging pedagogy.

Tracy Broadbent, Co-author of Switched on Minecraft.

