MINECRAFT
in the Classroom

Ideas, inspiration, and student projects for teachers

Colin Gallagher, Editor

with Shane Asselstine · Dan Bloom · André Chercka · Adam Clark
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Dedication

I dedicate this book to my family back home in Ireland. We may be far away, but you have always supported my decisions in life. I also dedicate this book to my wife, Sharyn, and my other family in Cleveland, Ohio. Thanks for putting up with me, everyone!

My friends in Singapore, in Ireland, and spread around the world. Thanks for making the journey fun. Block by block.

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Introduction

When I first installed and started playing Minecraft (alpha release) back in 2009, I didn't know I was stumbling into something that was about to explode with popularity worldwide. Minecraft looked way different back then. There were no potions, no wolves, and no ender dragons, and there was no redstone. As I fashioned a rudimentary pickaxe out of wood and tunneled into a nearby mountain for the night, I was amazed at how engaged I was. For a game with graphics out of the '80s, the gameplay and engagement was something that I had not experienced before. As strange noises emerged out of the darkness of a cloudy full moon sky, I was thoroughly immersed in surviving the night and making it through to craft another day. Something was different about this game.

With each version of Minecraft that has been released, its creator, Markus Persson (Notch), has added and tweaked things. As Markus handed the reins to his trusty sidekick Jens "Jeb" Bergensten, Minecraft evolved; more and more people had their interest piqued, and more so when Creative mode was introduced in 2011. Creative mode removed all obstacles in the way of immediate creativity and building; there was now no need to spend time crafting materials.

The first time I became aware of Minecraft being used in education was when I stumbled upon some videos uploaded to YouTube by an American elementary school teacher, Joel Levin. I remember being very excited by what he was doing and how he had planned and crafted his Minecraft world to slowly introduce students to the nuances of playing Minecraft. He was steering them away from the aspects of Minecraft that had little educational value and corraling them into the areas where he saw massive educational potential. I also remember being very excited by how he was recording and uploading screencasts of his students' experiences in Minecraft as they happened.

My adventure with Minecraft in my school started in 2012, when I organized an afterschool club for third through fifth grade students. I used an outside host to set up a creative world in which my students could unleash their creativity and imagination. With the afterschool club a roaring success, the third-grade teachers and I decided to integrate Minecraft into the third grade curriculum the following school year. The year after that, we integrated Minecraft into the first and second grade curriculum, but this time using MinecraftEdu.

Minecraft in the Classroom

Today it seems as though everyone is talking about Minecraft in education. When teachers see what students are doing, they quickly see how they can apply it in their classrooms, although some are unsure how to get started. With that in mind, I was determined to make sure teachers around the world could grasp what teachers are doing. For this they would need to see the Minecraft world and hear what teachers had to say about how they were using Minecraft in education. I started the Minechat series on YouTube to accomplish just that. I hope this book will build upon the Minechat series, provide a convenient repository of

examples of using Minecraft in education, and provide a framework for beginning the adventure of teaching and learning with Minecraft.

Minecraft has changed the way people look at a wide range of cultural norms—from education to urban planning. It has been turning heads since 2009, and in recent years it has been turning educators' heads with its sandbox-like environment and its ability to be modified to suit curricula. Children and adults alike revel in the freedom Minecraft allows in planning, creating, and collaborating in many ways.

Minecraft doesn't seem to be disappearing any time soon, so let's start leveraging its appeal and engagement in teaching and learning.

Who Is This Book for?

This book is designed to help teachers get started with Minecraft, and to be inspired by what other teachers around the world are doing with Minecraft. This book is also for parents and families to be informed on how Minecraft is used in an educational context.

Who Am I?

My name is Colin Gallagher. I'm originally from Ireland, but I've been traveling the world working in the educational technology field since 2003. I've been working at ISS International School in Singapore since 2011, and in 2013 I also started working for Michigan State University as an online instructor for their Master's in Educational Technology program. Along the way I've presented on many aspects of educational technology at conferences around Asia, including TEDx in Bangkok. I've become an Apple Distinguished Educator and a Google Certified Teacher and connected with many like-minded teachers around the world on Twitter and Google+.

I've played computer games all my life, and I find it a fun and engaging hobby. Education and gaming became intertwined when Minecraft started being used in teaching. For me that's a perfect marriage.

I started wondering how teachers were becoming informed on Minecraft in education. The perfect way to know what people are doing is to see the world and hear the teacher, so I came up with the Minechat series on YouTube: http://goo.gl/peS1Qg. In it, I interview teachers over Skype while recording our tour around the world. Twenty-six episodes later and I'm still looking for more teachers to add to the channel to keep teachers inspired and informed about Minecraft in education.

I also wanted a place that teachers could join and just type up questions or add links to interesting Minecraft-related articles. For this, I created a Google+ Community: http://goo.gl/bBvRjW.

As of this writing, we have over 2000 members and counting.

With this book I'm hoping that teachers have an additional resource they can look at to garner ideas or to know who to contact with their questions about Minecraft in education.

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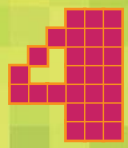

Minecraft in Education—Why?

You may have had to answer some questions from school administrators, parents, and other teachers as to why Minecraft is so important to implement in your school. Normally, just looking at teachers' work online (especially in my Minechat series!) is enough to prove the benefits, but sometimes a clear set of reasons comforts people more.

If you ask teachers around the world why they use Minecraft, they might come up with a wide array of answers. I've listed my reasons in this chapter, but I'm sure I'll add to the list as teachers find more incredible ways to use Minecraft in their teaching.

Collaboration

Working with other people is probably the most challenging aspect of school (and life). Teamwork activities happen regularly during the year in my school, and they involve students trying to learn a lot of very tough collaborative skills, such as negotiating, listening, following directions, and accepting criticism. I think that we, as adults, also struggle with these things at times.

In Minecraft, there is huge potential for developing these collaborative skills. I've talked with dozens of teachers about their Minecraft projects, and they explained that usually students work together to complete tasks. If they are not working together, they are usually in the same world trying to ignore distractions and avoid conflicts. Minecraft is, in essence, a social game. It begs to be played with other players. In an educational setting, students can work on collaborative skills in Minecraft when planning, building, and presenting a project as a group.

When students work as a group in Minecraft, it is vital that they work effectively. There's something interesting about Minecraft: Often, at least initally, working together effectively does not happen. I think the freedom is too much for some students, or they have not adjusted to using Minecraft in an educational setting. Conversations, guidance, and advice between group members and between groups and teachers can help develop the collaborative skills needed for effective group work.

Creativity

Every generation has something that enables young people to let their creativity run wild. For my generation, that was probably Legos. Someone might argue that Legos were many generations' outlet for creativity. I admit, though, that growing up in Ireland I had a lot of outside play and exploration, which also unleashed my creative side. A great big world awaits our students' exploration, too, and not just in Minecraft.

Minecraft has enabled young people from kindergarten to college to start creating. Minecraft has inspired people to re-create everything from spacecrafts to entire cities. Minecraft has inspired people to create stories, poems, paintings, and animations. Creating things in Minecraft inspires creativity in other ways. For example, a very popular project to

have students underake is to re-create their school. As this is being done, students are naturally compelled to think about what their ideal school looks like and what changes they would make to their current school.

You could look at an empty Minecraft world as a blank canvas awaiting a player's unique creativity. The lines between art, design, architecture, and urban planning are becoming thinner in Minecraft. Without knowing it, children are sowing the seeds of their passions in life and of what may be in store for them in their professional careers.

Differentiation

We learn very early on as teachers that not every student is the same; they do not learn the same way, and they might not be able to convey their learning in the same way. I have had many students whose first language was not English or who found it difficult to write their final assessments because of learning disabilities. Differentiating for students generally means giving them different avenues to explore content, understand content, process that content, and create content.

Technology has always been a major factor in providing students those different avenues: video and audio platforms as instructional tools, animations and digital comic strips as tools to create content, and Google Apps as a way to organize learning.

Minecraft has been used to differentiate in a number of ways. You will see a lot of examples in this book about how it could work with the wide array of different learners in your class. You can create immersive worlds as a visual, interactive, and informational field trip so students can attain more than just words on a page. Students can create worlds to present their learning on a subject matter that they might not have been able to reproduce on paper. Some fifth grade students in my school last year created hydroelectric dams and solar panels within Minecraft as a way to demonstrate their learning on energy. The student that created the dam was not a native English speaker, but from looking at the intricate working parts on the dam, I could instantly see what he had learned.

As differentiation is such a widely discussed and important aspect of education, it is worth noting that Minecraft might not be the best tool for every aspect of differentiating for a student. We cannot dismiss it, though, because it's another powerful tool you can use to help students.

Digital Citizenship

Digital citizenship goes hand in hand with collaboration and can be a vitally important lesson in managing a digital life for our students. Minecraft is a digital world and you do not see your collaborators face to face, which can lead to some interesting scenarios for our students. Usually it is hard for a student to communicate online with others; it is not something they have had to do before. They may have viewed YouTube videos and seen the horrendous comments and believed that "anything goes" online.

When griefing (damaging other people's stuff) occurs in Minecraft, it can be an amazing moment for students to learn not just about digital citizenship but about property ownership, responsibility, and respect. You may find that the sweetest student in your class does some mean things once behind a computer screen. What students type in Minecraft when they think nobody is monitoring is another learning moment that deals with their perception of what they think is right and wrong to type online and how nothing online is temporary—there's always a record somewhere.

A major spinoff from Minecraft is the amazing YouTube culture it has created—people who want to show off their Minecraft work make a YouTube channel. A lot of students in my school have Minecraft YouTube channels. Along with YouTube, sadly, comes a negative part of digital life: the criticisms, the trolling, and the dislikes. For students and adults alike, it is very difficult to take the anonymous and sometimes downright nasty feedback. These can be very hard but powerful learning moments for students. Parents need to be aware of their students' online activities, so I always conduct a yearly session with parents to educate them about how to manage their children's digital lives.

Engagement

In this day and age, engaging students is difficult. Teachers have to stay current with modern teaching and best practices just to stay afloat in the classroom. Engagement is tricky because not every student is alike and they don't all have the same interests.

I have been using Minecraft in school for four years, and I have not come across a student who did not like it and was not immediately engaged. That amounts to zero in about 250 students. That is one amazing statistic. Students are engaged with Minecraft, and it's because of the reasons listed in this chapter: it's a creative space, it's fun, and it's relevant to them.

Fun

Yes, fun is good. But is fun enough? Sometimes, but it's best when fun is accompanied by engagement and a well-planned project. Students find Minecraft fun because they get to be creative and because it's technology—and they like both those things because that's where they are in their lives. They live with technology daily, and for children creativity is a major source of pride and a feeling of accomplishment. Adults like Minecraft because we can be creative again, and that's fun.

Independence

The controls in Minecraft are not difficult to master. My first grade students had it down after a few sessions. When it comes to independence in the real world, younger students are still a little bit restricted, but inside Minecraft they can take control and do what they feel like doing. Students love showing off their work in any form, but from start to finish in Minecraft they are truly in charge of their creativities.

Leadership

In every school around the world is a student who knows Minecraft inside out. These students are often the second (or sometimes first) teachers of Minecraft in the class. The leadership these students take on is a powerful and meaningul experience for them, and most times they are students you would not pick out as natural leaders. Minecraft gives opportunities to students to lead, organize, and mentor their classmates, which leads to more confidence in themselves.

Relevance

Look around you in the restaurant at lunch; look around you on the bus or train to or from work. Most people are staring at devices instead of books or newspapers. Now this may be a good thing or a bad thing, but I'm not going to get into that. My point is that students were born into *this* world. Of course they should know about (paper) books, and books should be a part of their lives, but students see their parents with a technological device rather than a book every day.

Our students are in the middle of this world and living this life with us. Technology is relevant. Video games are relevant. This is what it's going to be like for a very long time, and if we don't make this a part of their educational life too then we are doing them a disservice.

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