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Up Your Game: Engage Your Learners With Minecraft

by Vance Stevens

Student engagement has become a serious challenge for teachers in online environments. One challenge in teaching any syllabus is where to depart from it and address the whole student—that is, identify activities that are intrinsically interesting, motivate students to want to stay on task, and apply critical thinking and problem-solving skills while practicing listening, speaking, reading, and writing communicatively, and link that back to a curriculum. The challenge becomes more acute when classes are being conducted virtually.

Teachers in such contexts are finding ways to connect synchronously with one another to share activities that will address this conundrum. To counter "Zoom fatigue," teachers might introduce an element of virtual worlds for variety in how they teach in synchronous online environments. I have been working for the past 7 years with a group of teachers who have been learning about and developing their skills in Minecraft as one approach to the problem of finding compelling virtual spaces for materials and language development. Our focus has been on bringing each other up to speed with the game and in so doing extrapolate to how we can use it with students.

We started with exposure to how other teachers were building spaces in Minecraft for student language development, and seeing that this would be worthwhile for our students, we had to become familiar with the game itself in order to adapt it to our purposes.

Minecraft is couched in a participatory culture that elicits communication among participants. Success in developing language skills through Minecraft derives from incentives to unlock its depth and opportunities for creativity and sharing insights with others in the learning community. There are many communities of learners and teachers who utilize Minecraft as a substrate to their learning goals (Smolčec, Smolčec, & Stevens, 2014).

Our Minecraft professional community came together through association with the TESOL Computer-Assisted Language Learning Interest Section project Electronic Village Online (EVO). EVO has just celebrated its 20th anniversary as a viable and productive community of practice (CoP) where teachers learn from one another in online workshops covering a range of topics for 5 weeks preceding each annual TESOL convention. Teachers volunteer to organize sessions where anyone can participate for free, whether they are TESOL members or not. The EVO Minecraft MOOC sessions started in 2015 and have just completed their 7th iteration as an annual EVO session.

Why Use Minecraft for Language Learning?

Minecraft is a deeply structured, open-ended, and creative game. Developed in 2009, it was soon discovered by educators who found that the problem-solving and critical thinking features inherent in the game appealed to students and teachers alike and might be beneficial if ported into their learning contexts. Furthermore, the participatory culture surrounding the game was ripe with opportunities for creativity and developing skills in multimedia communication, frequently in second languages.

Kuhn and Stevens (2017) show how use of virtual worlds such as Minecraft can leverage players' keen desire to communicate with each other what they are learning about their domain, their interest in Minecraft, and how this can further their language learning and teaching objectives. Whether the participants are students or teachers, they are learning new ways of self-directed and autonomous learning through playing a game that can be used in a wide range of pedagogical contexts.

Our CoP has identified many affordances of Minecraft for language learning. For example, Minecraft is

- **Fun:** Minecraft is inherently gamified to attract play, increasing time-on-task for language learning.
- **Creative:** Unlike games that limit what players can do in the game, each player in Minecraft is by default a builder, free to structure their world at will.
- **Game based:** Minecraft can be modified by teachers to create customized learning environments directed at promoting concepts in the curriculum.
- **Community based:** Minecraft has an extensive range of networks and resources in almost any medium, easily discoverable using Google or YouTube searches online.
- **Communicative:** Minecraft encourages communication, including student narratives, multimedia productions, conversations with teachers and peers, and eTwinning (learning in partnership with students in other settings, often for the purpose of developing skills in each other's languages).
- **Inquiry based:** Encourages research using Google and YouTube, acting on such reading and listening, and communicating discoveries to others.

Learning to Use Minecraft With Students

The community aspect is critical for giving participants purpose for being in-game, for learning its intricacies, and for allowing a sense of success through rapid improvement in one's target skills as practiced under the apprenticeship of others. Minecraft is not a game that can be fully appreciated while playing in isolation. However, educators needing to preserve kid-safe environments rarely encourage the participation of other adults. So, we brought the CoP approach to bear on a solution when we invited teaching peers facing this common hurdle to join us in EVO Minecraft MOOC.

As our CoP grew, we found we had a wide range of expertise. Many of our participants were already knowledgeable in the game and willing to help scaffold others. There were even people there who would set up a server for us and keep it running for the past 7 years. By now, EVO Minecraft MOOC has become a viable CoP couched in a complex ecosystem based in numerous social networks, including Facebook, Discord for voice and discussion, and the game itself (Stevens, 2019).

Examples of Use With Language Learners

Choosing an Edition Compatible With Your Platform

Before using Minecraft, teachers need to choose an edition compatible with the platform students will be using. The classic Java edition, which costs less than US$30, is the most flexible option because it provides unlimited play and download of software on a theoretically unlimited number of devices. Schools can purchase the Minecraft Education Edition for an annual license of US$5 per workstation, allowing multiplayer through the school's network. There are also hosted solutions, for example Minecraft Realms, where for US$8 a month you can host up to 10 players at a time in either Java (for PC, Mac, or Linux) or Bedrock (not compatible with Java).

Example of an educational resource pack suitable for STEM; hence CLIL; hence language learning. (Posted June 29, 2021 at www.facebook.com/playcraftlearn. Available on the Minecraft Education Edition website.)

Directing the Process

Once your students are in Minecraft, there is the question of who directs the process. The students can show the teacher what they know as a focus of language communication. A

presenter at an ISTE Conference in Philadelphia said she observed her students playing Minecraft during breaks between classes, and they suggested they play Minecraft during class time. She would agree only if it supported her curriculum, so the students worked with her to propose and document activities that she could use to justify to her administrators how that could be done, which launched a unique learning experience for both students and teacher.

Exploiting Opportunities for Learning

Teachers learning from students is a powerful motivator in support of authentic opportunities for meaningful communication, but the more teachers learn about Minecraft, the more they are able to set up environments where learning can be directed. For example, they can exploit the presence of hidden temples that occur in game, or construct their own builds to facilitate lessons on civilizations and archaeology. Moderators of EVO Minecraft MOOC have also shown us resource packs that relate to timely topics, such as a Mars lander introduced to coincide with the 2020 NASA Mars mission.

Post by Surajmukhi to the EVO Minecraft Discord channel in the Partyplanners-Text-Chat discussion.

The Virginia Society of Technology in Education (VSTE) is another robust CoP where teachers meet monthly to show each other how to tweak the game, often having students demonstrate how they use the game to meet learning objectives. Students have created phenomenal builds, such as mockups of NASA space rockets complete with finely detailed interiors, as well as a haunting mockup of a WWII concentration camp.

The two following screen shots were made on a tour hosted by VSTE at one of their regularly scheduled Minecraft Mondays, where they often meet with student East Coast Miners to

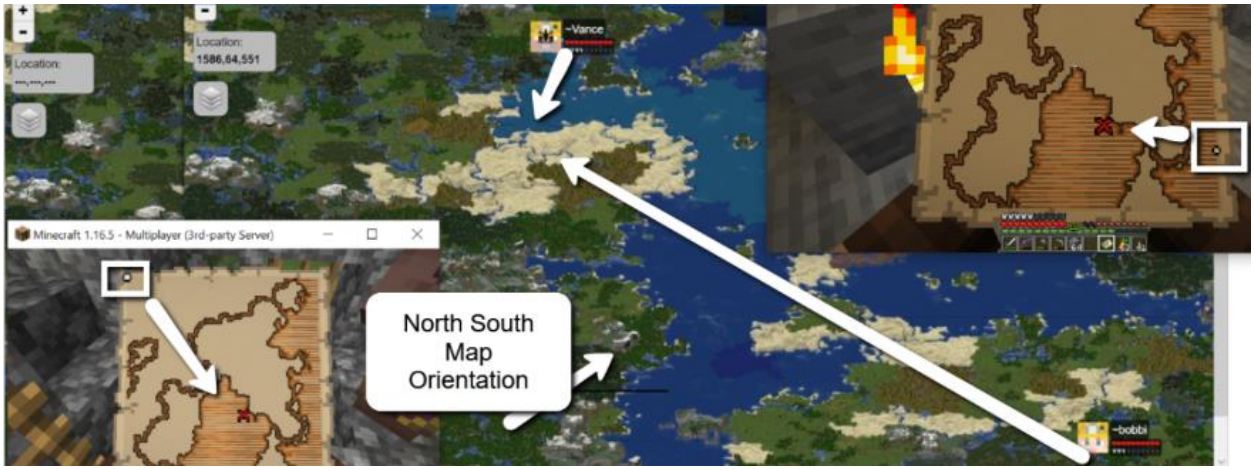
showcase their projects. (Find these and other projects by East Coast Miners described in greater detail at learning2gether.net.)

This build shows the several rockets replicated in fine-scaled interior and exterior detail by one of the students.

This build overviews an interactive reproduction of a Nazi concentration camp rendered by a student to create a perspective of how one might have experienced life there.

The potential for communicating processes derives from the complexity of objects that occur in game; for example, the ocean biomes present challenges for players who can use in-game chemistry to create potions allowing them to breathe there. There is no end of videos and wiki pages students can research to learn more, and unlocking one process opens other discoveries that parallel real-life lessons on ecology and sustainability. VSTE students maintain turtle farms, and even the simple act of learning how to craft a fishing pole can open significant possibilities. One VSTE project had students record fish catches and enter the data into a database linked through Discord to reveal patterns—and just catching fish increases experience points, which increase power to create potions. Fish can also be used to tame cats, which will bring their owners useful and hard to find objects overnight (and taming dogs affords a level of protection as they will aggressively attack monsters to protect their owners).

Problem-solving in Minecraft includes cartography and orienteering. Maps can be obtained from villagers and followed to surprising locations, or maps can be found on shipwrecks strewn about Minecraft. It's a difficult puzzle to extract them from underwater chests, but once found they point the way to treasure. Following a map requires trigonometric and orientation skills and yields fun opportunities for meaningful collaboration.



Screenshot showing triangulation on map location to find buried treasure.

Another important level of depth in Minecraft is in learning about redstone (a useful building material in the game, found deep underground) and how to use it to power your builds and create logic gates that make things happen algorithmically. VSTE provides workshops to explain the intricacies, and in EVO Minecraft MOOC, we have learned this skill from our young participants, who relish explaining it to us, as in this example on YouTube.

Screenshot of a VSTE Minecraft Monday workshop on redstone basics.

Conclusion

Our most recent need to move into online environments—teachers and students in classrooms and educators holding webinars and conferences—has changed our thinking, making us more amenable to adapting what is positive about those contexts into our inevitable reconception of education. One such change is a natural move of professional development into CoPs, which makes more likely a consideration of more engaging spaces for learning online than simply Zoom re-creations of traditional classroom practices. Virtual worlds are an increasingly frequent topic of webinars in CoPs, as are gamification and game-based learning. These features should figure more prominently in future development as we create materials and interfaces for meeting our language learners online.

References

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Vance Stevens *hosts the podcast series Learning2gether, which has more than 520 episodes. He founded the CoP Webheads in Action in 2002 and has coordinated the TESOL Computer-Assisted Language Learning (CALL) Interest Section Electronic Village Online since 2003. He has been lead moderator of EVO Minecraft MOOC since 2015. In 2019, he was awarded the CALL Research Conference Lifetime Achievement Award for that year.*