



The Educational Impacts of Minecraft Education Used by Elementary School Students: An Exploratory Study

Author(s): [Thierry Karsenti](#) (presenting), [Julien Bugmann](#)

Conference: [ECER 2017](#)

Network: [16. ICT in Education and Training](#)

Format: [Symposium Paper](#)

Session Information

16 SES 11 A, Current Trends and Challenges of Technologies in Education: From learning with MOOCs to using Minecraft at school (Part 2)

Symposium continued from [16 SES 10 A](#)

Time: [2017-08-24](#)
[17:15-18:45](#)

Room: [W4.23](#)

Chair/Discussant: [Thierry Karsenti](#) / [Bruno Poellhuber](#)

Contribution

The Educational Impacts of Minecraft Education Used by Elementary School Students: An Exploratory Study

Coding is now a required skill in a number of countries, including France, Great Britain, and Sweden as well as some provinces of Canada. It would therefore be important to gain a deeper understanding of how coding is being taught, along with the effects of the tools that are used for this purpose. It is vital for children to learn how to code if they are to fully occupy today's digital universe and what it holds for their future. Computers will be taking over more and more aspects of daily life as we operate more remote controls, answer more cell phones, spend more time on social networking sites, consult the GPS, and so on. Yet too few students know how to code, and even fewer have mastered the ins and outs of coding. It is therefore imperative to introduce coding into our classrooms so as to equip our young citizens for the future. This paper presents an exploratory analysis, conducted in Québec schools, of the use of the video game Minecraft Education Edition. This educational version of the popular Minecraft series was designed to engage students in a game that is both creative and, more to the point, educational. Teachers can use it in class to foster the development of computer skills, collaboration, and teamwork, among others. First and foremost, however, the game was intended to provide a fun way to develop coding skills. We present a project in which 70 elementary students from grades 3 to 6 participated. We show how this video game maximized learning in a school located in a disadvantaged neighborhood in Montréal, Québec, notably through the creation of 30 achievable tasks grouped into 10 levels according to various competencies. As the students advanced through the levels, we observed a number of benefits of classroom gaming, both academic and social. We analyzed videotaped play

sessions, performance reports for the various levels, and group interviews with the students. We discuss the observed educational benefits and suggest potential applications of Minecraft Education Edition for elementary school.

References

Callaghan, N. (2016). Investigating the role of Minecraft in educational learning environments. *Educational Media International*, 53(4), 244-260. doi:10.1080/09523987.2016.1254877

Cipollone, M., Schifter, C. C., & Moffat, R. A. (2015). Minecraft as a creative tool: A case study. *Gamification: Concepts, methodologies, tools, and applications* (pp. 956-969) doi:10.4018/978-1-4666-8200-9.ch047

Hanghøj, T., & Hautopp, H. (2016). Teachers' pedagogical approaches to teaching with Minecraft. Paper presented at the Proceedings of the European Conference on Games-Based Learning, , 2016-January 265-272.

Janßen, D., Tummel, C., Richert, A., & Isenhardt, I. (2016). Towards measuring user experience, activation and task performance in immersive virtual learning environments for students doi:10.1007/978-3-319-41769-1_4

Pusey, M., & Pusey, G. (2015). Using Minecraft in the science classroom. *International Journal of Innovation in Science and Mathematics Education*, 23(3), 22-34.

Author Information

[Thierry Karsenti](#) (presenting)
University of Montréal

[Julien Bugmann](#)
University of Montréal