

## Chapter 22

# Designing a Minecraft Simulation Game for Learning a Language Through Knowledge Co-Construction

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### ABSTRACT

*The purpose of this chapter is to design a Minecraft simulation game where players can learn a language by communicating and negotiating meaning with other players. To achieve this, Gagné's events of instruction and Schmitt's strategic experience modules were adopted as a theoretical lens for simulation building. After the simulation game was designed, it was implemented to test its feasibility. The result shows that the simulation game has both the intended features of knowledge co-construction and the negotiation of meaning, as well as enjoyment of the game. The test result, however, also suggests that the simulation game needs more conditionals and loops in order for players to repeat their simulation game at any place and time.*

### INTRODUCTION

Minecraft is no longer a new tool in game-based learning. Teachers have been experimenting with different ways to use it in the classroom for some time. Some teachers use it to teach mathematic concepts like ratios and proportions, to experiment with science phenomena, and to experience cultural differences

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in society, while others adopt it to support student creativity and collaboration. Minecraft also can be integrated indirectly to stimulate creativity, imagination, and collaboration in learning languages. For example, Marcon (2013) used Minecraft to get students to describe in writing the unique features of their characters. Uusi-Mäkelä (2014) included it for students write journal entries during game play, while Lorence (2015) had students write in-game books that could be loaned out to one another. As noted by Kuhn and Stevens (2017), Minecraft seems to be an ideal fit for language learning.

This chapter aims to show how one might design a Minecraft simulation where players can communicate and negotiate meaning during game play, as well as construct knowledge with other players. Additionally, the chapter will explore how to boost students' interests in learning a language through simulation game features, and essential expressions are introduced to help students become more fluent in everyday conversations. In Minecraft there are four real-life based themes that players experience through the simulation game play: Landmarks in the World, Having Fun in an Amusement Park, Attending a Party at a Friend's House, and Designing a Share House. While playing the simulation game and completing the various quests, players are encouraged to negotiate unfamiliar words or phrases and co-construct new knowledge by carrying out their individual or collaborative tasks. Since the four themes in the simulation game are related to real-life situations that players may have experience with, the players are led to learn essential expressions in natural and motivating ways. In order to meet the objectives of using Minecraft as described in this chapter, various learning theories related to role playing, and research on Minecraft use in the classroom, are explored. Gagné's (1992) instructional design model and Schmitt's (1999) Strategic Experience Modules are reviewed as the basis for building the simulation. After the simulation was designed, it was implemented to test its feasibility. Many non-English speakers have difficulty in learning English since they learn the language as an academic object rather than a communication tool. Moreover, they are often taught English expressions in fragmented and decontextualized ways. As a result, even though non-native English speakers may experience years and years of English education, they can be afraid of having conversations in English. The contribution of this simulation game in conjunction with language classes is to help language learners recognize English as a communication tool, acquire essential English expressions meaningfully and holistically in context, and apply what they have learned outside of the classroom by communicating fluently with other English speakers.

## **REVIEW OF RELATED LITERATURE**

In this section, the basis for the main topic of this study, co-construction of knowledge, will be briefly introduced before looking at its theoretical background in the next section. First, a brief definition of co-construction of knowledge will be discussed and followed by how game play interactions are beneficial for learning in general or learning languages in particular. Then, how the features of knowledge co-construction are implemented within a designed Minecraft simulation game will be described.

### **Co-Construction of Knowledge in Language Learning**

With a constant flood of information, it is impossible for people to store huge amounts of information in memory without some of it becoming meaningless. As a result, society does not look for polymaths, but rather for people who can create new information by sharing and understanding pre-existing knowledge

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