

# Educational Roles and Structures of Interaction in a *Minecraft* Affinity Space

Joey Huang, Indiana University  
Sean C. Duncan, Indiana University

**Abstract:** We discuss preliminary findings based on social network analyses of a gaming affinity space. We focus on the constructions and interactions among participants who identified themselves as teachers or youth in relation to the gaming and learning activities through *Minecraft*. The findings show the ways in which the underlying identities of participants can shape interactions and structure discussions in a nurturing affinity space.

## Introduction

This study illustrates how the identities and roles in real life may shape interactions in an affinity space. Affinity spaces are identified as rich and effective sites of informal learning in which learners pursue shared interests and interact through online networks (Gee, 2005; Duncan & Hayes, 2012). One of the major features of affinity spaces is *anonymity*; participants do not have to share social factors such as age, geography, or occupation. According to Gee (2003), affinity spaces are democratizing, egalitarian spaces where participants exchange information and express opinions without physical constraints and identity bias. In previous studies of affinity spaces, we have assessed how participant role or identifications with real life roles can shape how the communications and tensions may change (Duncan & Huang, 2014).

Pellicone and Ahn (2014) examined the social network structure of an affinity space, focusing on game-based learning in communities of *Minecraft* players. They claimed that informal leadership played a key role, and a minority of participants usually accounted for the majority of participations. Although the space they analyzed was contributed to by a large majority of participants, participants did not directly reference or interact with each other. In addition, it was unclear if and how real-world identities (e.g., such as gender and ethnic identities) influenced the interactions between participants in the space (Pellicone & Ahn, 2014). We wished to extend both our previous work and the social network approach of Pellicone & Ahn (2014) by analyzing social factors and constructions within the space's structure and how interactions and conversation structures may change depending on the identity of participants.

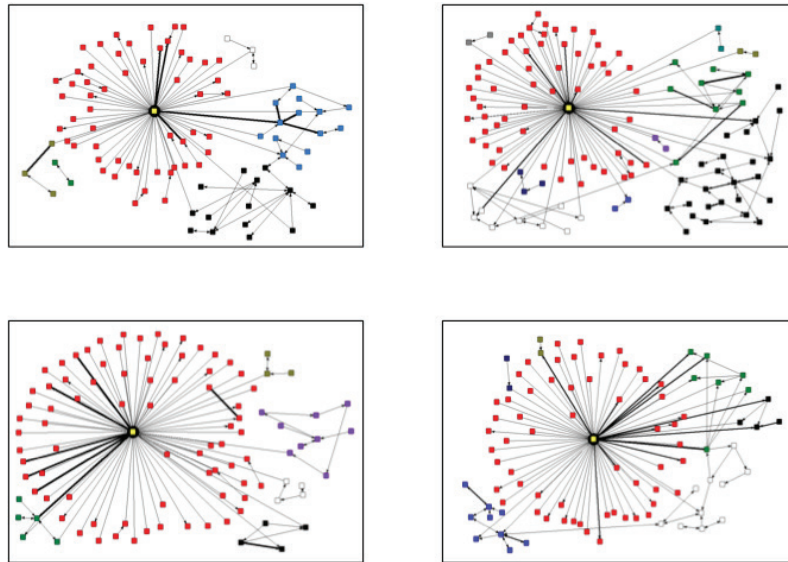
## Methods

### Data Collection

We sampled text from four threads from a dominant discussion community for *Minecraft* (Reddit's subreddit */r/minecraft*), focusing only on threads wherein the original poster clearly flagged themselves explicitly as a teacher or as a youth using *Minecraft* in a school. These threads were labeled according to whether or not the original poster self-identified as a youth (Y1, Y2) or as a teacher (T1, T2). Original posters (henceforth OPs) of Y1 and Y2 shared a key commonality about how they used *Minecraft* to accomplish school assignments or for educational purposes, posting pictures of their works on the site for discussion. In contrast, the OPs of T1 and T2 both identified themselves as teachers who looked for instructional advice in applying *Minecraft* to classroom and school settings. Data was collected by starting at the first post in each thread and coded in a chronological order to record the interactions of participants. Y1 included a total of 156 posts (three deleted before our analysis) contributed to by 91 unique posters, while Y2 included 197 posts (nine deleted) from 116 unique posters. T1 included 149 posts (5 deleted) from 100 unique posters, while T2 included 178 posts (10 deleted) from 93 unique posters.

### Social Network Analysis Findings

In order to better understand the interactional structure of each thread, we applied the Girvan-Newman clustering approach (Knoke & Yang, 2008) by clustering according to features of modularity in the threads. Findings showed that, unsurprisingly, the majority of discussion for all threads centered on the OPs, nodes in yellow, and these discussions were constructed by a large majority of the single participants who only had interactions directed at OPs (red nodes). However, both threads created by youths (see Figure 1 A and B) represented greater density of subgroup discussions compared to the threads posted by teachers (see Figure 1 C and D). In particular, the constructions of Y1 and Y2 displayed there was a majority of single participants who joined the subgroup discussions and did not interact with OPs directly. Instead, participants of subgroups from T1 and T2 often directly connected and interacted with OPs on both threads posted by teachers.



**Figure 1. Described in rows from top left: A. The social construction and interaction of thread Y1, with the width of 128 ties representing the strength of interactions. B. The social construction and interaction of thread Y2, with the width of 160 ties representing strength of interactions. C. The social construction and interaction of thread T1, with 128 ties. D. The social construction and interaction of thread T2, with 139 ties.**

## Discussion and Implications

Based on these preliminary analysis, we speculate that the identities of the participants in real life and their concomitant means of framing their instructional activity (as *questions* by teachers, and as *contributions* by youth) potentially influence the shape of discussions in affinity spaces. Interactions between participants vary in relation to the density and engagement of subgroup discussions, in particular. These results provoke a further analysis of how the roles and identities of participants shape discussions in affinity spaces. In future work, we wish to explore the motivations of participants and how they may frame the discussions and engagement in affinity spaces.

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