



# Raising Real Leaders Using Virtual Worlds

## Blending Minecraft, Leadership, and Creativity

**Kristin H. Javorsky**

Two third-grade boys sit hunched over a shared tablet, animatedly discussing how to start a structure they are building in the virtual Minecraft world on their screen. To decide whether to use wood, stone, or brick, they are placing a few blocks of each type on a field of green grass to compare the materials visually. An afterschool teacher who has stopped to listen praises them for using one of the leadership habits the class has been discussing, “Begin with the end in mind.” Nearby, two other third graders are taking turns using their tablet to place a sidewalk and light fixtures outside a multistory building in the same virtual world. The teacher observes as the girls deliberately balance the fixtures evenly along the sidewalk. Proudly, they tell her that they are remembering to

“Synergize,” using another of the leadership habits the class has discussed.

This article describes how a federally funded afterschool program serving an elementary-age population in a rural southern community used the creative affordances of Minecraft and a creative youth development (CYD) framework to support the local school district’s character education program, The Leader in Me (LiM). On receipt of a 21st Century Community Learning Centers (21st CCLC) grant in 2017, the program began serving students in grades 1 through 4 four days a week, with priority given to students performing at or below the 25th percentile on the state’s standardized literacy assessment. I was involved first as the writer of the 21st CCLC grant and then as a co-originator and observer of the Minecraft LiM curriculum.

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The afterschool program incorporated five different interest clubs, through which groups of 25 students at a time rotated during the year. In the first year of implementation, Minecraft LiM was one of these five clubs, serving 24 first graders and 25 second graders in the spring semester and 75 third and fourth graders during a month in the summer. In addition to using Minecraft for creative design work, students created art using various media, read high-quality diverse literature about leaders and leadership, kept daily writing journals, participated in conversations with community leaders, toured local public buildings, and prepared leadership presentations for family engagement events.

## Leadership and Creativity

Creativity and innovation continue to gain importance as necessary leadership skills in the 21st century (DiLiello & Houghton, 2006; Hughes, Lee, Tian, Newman, & Legood, 2018; Smith, Montagno, & Kuzmenko, 2004). Though educational standards have begun to reflect the need to develop these skills, actual educational practices lag behind (Soulé & Warrick, 2015). Research finds that classroom use of multimedia can encourage some forms of creativity (Chiang, Chiu, & Su, 2016; Yilmaz & Goktas, 2017). Meanwhile, digital design is now recognized as a viable form of creative expression (Vaidyanathan, 2012).

### **The Leader in Me and Minecraft**

LiM is a character-building curriculum based on Stephen Covey's *Seven Habits of Highly Effective People* (2004) and *The Leader in Me: How Schools Around the World Are Inspiring Greatness, One Child at a Time* (2008). LiM aims to teach K–12 students 21st century leadership and life skills by introducing seven leadership habits:

1. Be proactive.
2. Begin with the end in mind.
3. Put first things first.
4. Think win-win.
5. Seek first to understand, then to be understood.
6. Synergize.
7. Sharpen the saw. (Covey, 2008)

One of the stated goals of LiM, which is billed as a schoolwide transformation program, is to increase school attendance and reduce student referrals. Several studies have found correlations between LiM implementation and reductions in behavioral incidents (Bryant, 2016; Pascale, Ohlson, & Lee, 2017; Stella, 2013). Other studies have found correlations with improved student achievement and leadership skills (Corcoran, Reilly, & Ross, 2014; Cummins, 2015).

After the school district discussed in this article adopted the LiM curriculum, the principals and teachers recognized that, in order to achieve results like those cited in the research, students would need time and opportunities to engage authentically with the curriculum. Simply hanging new banners and memorizing new slogans was likely to be ineffective. This view was consistent with research showing that teachers correlated classroom behavioral improvements with students' levels of interaction with LiM (Humphries, Cobia, & Ennis, 2015). Another study found that when students in the early grades participated in LiM to the extent that they internalized the leadership values, those students showed behavioral gains for up to three years (Ishola, 2016). During a district needs analysis I conducted before writing the grant, I saw that, although the school district was excited about this research, its staff recognized that solid implementation required coordinated efforts on the part of teachers, staff, and students.

In response to this need, I proposed adding Minecraft LiM to the afterschool program. To fully engage students in LiM while encouraging creativity, I worked with the lead afterschool teacher to embed the leadership program in the popular and relatively inexpensive virtual platform Microsoft Minecraft. The goals of LiM align with research linking collaborative student use of Minecraft to positive effects on social and emotional learning (Zolyomi & Schamlz, 2017) and specifically on collaboration, critical thinking, and problem-solving skills (Nebel, Schneider, & Rey, 2016). Combining LiM with Minecraft construction and role play would allow children to apply their new leadership habits both to challenges in the virtual world and to collaboration with their real-world peers.

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## Creative Youth Development

LiM names *creativity* and *vision* among its values (Covey, 2008). Encouraging creative expression thus seemed like a good way to build afterschool participants' individual and group leadership skills. The afterschool lead teacher and I decided to integrate CYD into the Minecraft LiM club. According to the Creative Youth Development National Partnership (2018), the CYD framework "integrates creative skill-building, inquiry, and expression with positive youth development principles, fueling young people's imaginations and building critical learning and life skills." The framework's theory of practice involves using creativity to develop critical personal, social, and intellectual skills (Montgomery, 2017). The CYD National Partnership (2018) defines six key elements of CYD:

1. Youth are engaged in safe and healthy spaces.
2. Programs focus on positive relationship-building.
3. Programs are artistically rigorous and set high expectations of youth participants.
4. Programs are asset-based and help youth to build upon their inherent strengths and talents.
5. Programs are youth-driven and honor student voice.
6. Program approaches and outcomes are holistic, recognizing a range of youth needs and often integrating with other service providers to create a coordinated community response to those needs. (CYD National Partnership, 2018)

How Minecraft LiM incorporated these six key elements of CYD is outlined in the next section.

## Minecraft and Creativity

Set in creative mode, Minecraft offers users the ability to build original structures; to craft geographical features such as mountains, caves, and rivers; and to populate their worlds with humanoid and animal characters who can then interact in various ways. Minecraft thus enables original, creative expression (Morgan & Mungan, 2014; Voiskounskaya, Yermolova, Yagolkovskiy, & Khromova, 2017) and allows children to role-play and solve problems in ways that may not be immediately possible for them in the real world (Cipollone, Schifter, & Moffat, 2014; Dezuanni, 2017; Lane & Yi, 2017). Checa-Romero and Gomez

(2018) found measurable gains in student creativity when Minecraft was employed in the classroom. In their work on progressive pedagogy, Fanning and Mir (2014) conclude that Minecraft:

contains enormous social and creative value somehow greater than its constituent parts. The alchemy of the game's unrestrictive mechanics, the labor and originality of its players, and the participatory spirit ... all foster a vast array of inventive constructions and bring together a diverse community of crafters in a horizonless digital landscape. (p. 53)

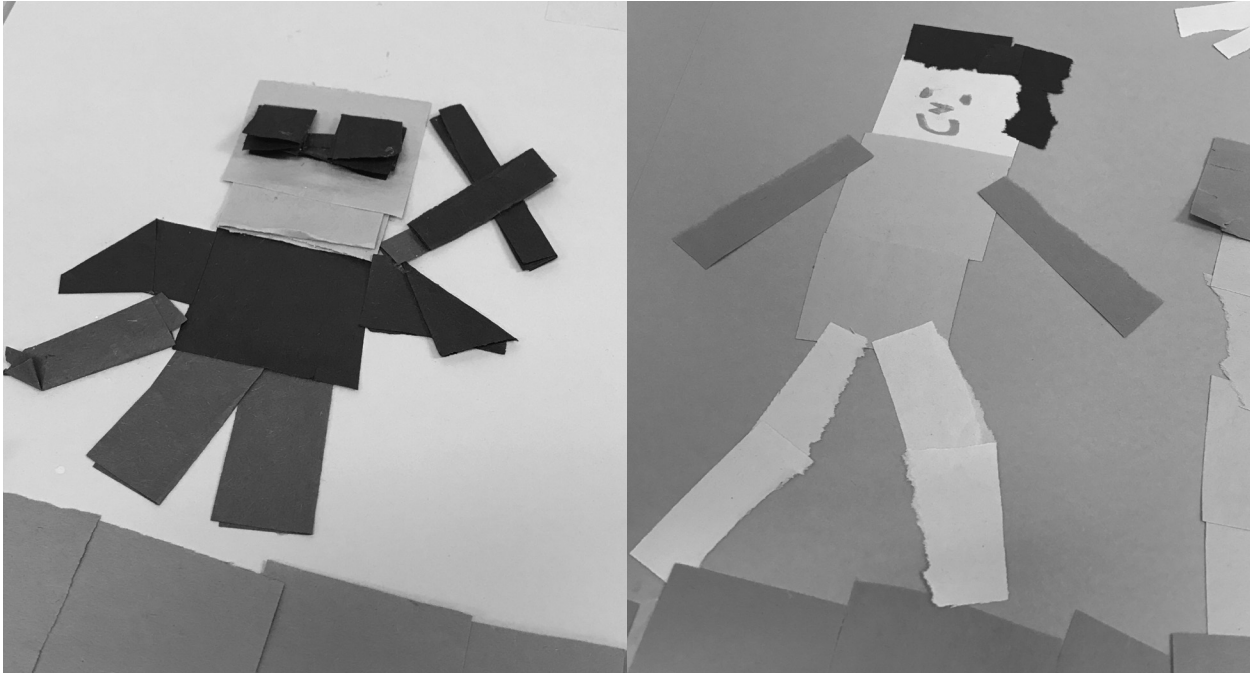
To work toward this vision of creative education, our Minecraft LiM program fostered the six key elements of CYD where possible. To help children feel safe, as required by the first key element, the lead afterschool teacher set the virtual Minecraft world to "peaceful" mode. Adults monitored participant chat boxes and supervised collaborative activities in the real-world classroom. The group as a whole defined—and enforced—rules for what could and couldn't be done in Minecraft, such as "no fighting" and "no blowing up other people's structures."

The second key element, relationship building, was a key part of the curriculum: The seven LiM habits explicitly address interactions with others. The lead teacher identified relationships as an early strength of the club, in part because she and the other teachers also worked in the school during the regular day. The lead teacher said that she greeted LiM club students by name in the hallways during the day and could connect school events to club content.

In keeping with the third key element, artistic rigor and high expectations, staff were encouraged to view Minecraft unequivocally as a tool for creative expression. However, to introduce Minecraft LiM to each new group of students, the lead teacher first asked children to create their avatars as paper montages, as shown in Figure 1.

Next, to help students get familiar with the virtual platform, the staff purchased handbooks of Minecraft tips and tricks at appropriate reading levels. Staff demonstrated use of these handbooks, showing students how to use the table of contents and glossary.

Combining LiM with Minecraft construction and role play would allow children to apply their new leadership habits both to challenges in the virtual world and to collaboration with their real-world peers.



**Figure 1. Paper avatars created by second-grade students**

With these skills in hand, children were given a great deal of autonomy in crafting their virtual worlds, in keeping with the fourth CYD element, which focuses on youth voice.

Keeping the program artistically rigorous, as recommended by the CYD National Partnership, the teacher encouraged students to “dream big” in their designs. For example, when the teacher charged the students with building a virtual version of a structure in their community, she emphasized that, rather than merely recreating what already existed, they should interpret the structure in a personally meaningful way:

I told the students to think about what is in a community. We had a discussion about the things that are in our own community, and then I challenged the students to create their own version of a building that is within a community.

As club teachers circulated around the room observing the small groups at work, they encouraged children to explain what they were creating and why. To some extent, these informal conversations served as rehearsals for the more formal presentation participants would give during the family event at the end of the eight-week club rotation.

Continuing the emphasis on artistic rigor and on children’s assets and voice, toward the end of the eight-week cycle, the lead teacher gave the students writing

prompts to help them evaluate their own creative processes. One third grader, who had chosen to create a train system, wrote:

I always wanted to ride a train or roller coaster in real life, so I know other people would, too. I wanted people to do things they never saw. I wanted them to explore my whole world and have fun! They could take things from me and make it themselves.

This student’s response suggests that he understood the power of creative expression to affect other people as well as himself.

Similarly, a club teacher reported that, after reading a book about animals in a zoo, the students “have become obsessed with building zoos, because we don’t have one here, and they think that we should, so they’re creating zoos for their friends to be able to visit.” These students were, as recommended in the fifth key CYD element, determining on their own and in discussion with partners what to include in their virtual worlds.

The Minecraft LiM program was holistic, as recommended in element 6, in that it tapped the expertise of local community members. Participants met with police and fire personnel, a hometown heroine who had recently won the state pageant, and the curators of two local history museums, either

during field trips or in visits to the program site where these leaders described their roles in the community.

## Demonstrating Leadership in a Virtual World

LiM itself is a holistic approach to teaching leadership. As new groups of children rotated into the Minecraft LiM club, teachers reviewed with them the seven habits that were being covered during the school day.

Each iteration of the club began with a read-aloud of a high-quality children's book with a leadership theme. Some first and second graders heard *Pig the Pug* (Blabey, 2016), the story of a dog who refused to share, and then debated which habit the pug should develop in order to get along with his furry friends. Third- and fourth-grade students worked through *Dream Big: Michael Jordan and the Pursuit of Excellence* (Jordan, 2014), identifying how Jordan used leadership habits to reach his goals. Other groups read other grade-appropriate fiction and nonfiction books.

After discussing these books and the choices their characters made, the children were ready to demonstrate their own creativity and decision-making skills in Minecraft. The teachers helped each cohort establish group norms and practice checking out and returning the iPads and Minecraft handbooks. Once the students were engaged in creation, the lead teacher and assistants roamed two spaces: the physical room, where they listened to student conversations and occasionally facilitated peer interactions using the leadership habits, and the digital world, where their avatars traveled the Minecraft town, which was based on the real town in which the students lived. Students chose leader-themed names for their avatars, such as Synergizer, Team Builder, and Ice Cream Helper.

This extract from my field notes offers examples of leadership behaviors I observed:

Working in pairs and small groups, the 25 students are logged into a virtual world where they are recreating and reimagining the downtown of their rural southern community. A few days earlier, they had taken a walking field trip downtown and met community members who shared stories of the

buildings' histories and significance. Now, as the children work, the teacher's eyes and ears are tuned for evidence that students have internalized and are using the ideas from the LiM curriculum.

A hand goes up. The teacher heads over to where three children are excited to show her the water feature they've added to the historic hotel downtown, now renamed The Greatest Hotel. Deciding on modifications hasn't necessarily been an easy task for the students. They had to apply LiM habits such as "Seek first to understand, then to be understood" and "Think win-win" to incorporate all three students' ideas into the design. The teacher smiles and compliments the trio's creation before moving on to another set of raised hands across the room.

Some of the students were able to articulate their use of the LiM habits in conversation with the teacher, whereas others seemed to need the teacher to explain their behaviors to them. In keeping with the CYD framework, the teacher took responsibility for making students aware of their own growing creative abilities, even as she asked them to connect their creative work to the leadership behaviors of characters in the books they had read.

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Across all of these activities, the CYD framework guided instructional decision-making so that children could incorporate their existing strengths into their responsibilities in their small groups. For example, a child who was comfortable with oral reading might be asked to read aloud from the Minecraft handbook, while another participant used her number knowledge to locate the correct page numbers in the table of contents. Students who had been to a zoo or another kind of structure with which other participants were not familiar shared what they knew with the rest of the group. In similar ways, the teachers gave all children opportunities to experience success as they worked toward internalizing the seven key habits of LiM.

For the club's culminating event, the students helped to write and present a narrated tour of their



**Figure 2.** This montage captures creative choices one group made in recreating a local grocery store.

cohort's Minecraft hometown for their families and visitors, explaining how they had used the seven LiM habits in its creation. Figure 2 is a montage of screenshots from one of these leadership presentations. Although the degree of student responsibility for the presentations varied by grade levels, in all cases the teacher set, and the students met, high standards for creativity and the ability to discuss creative choices, as recommended by the CYD framework.

### Behavioral Outcomes

Working with the school district, I used multiple measures to evaluate the effectiveness of Minecraft LiM in the afterschool program, including field notes from my observations of club activities, ongoing discussions with the lead teacher and teaching assistants, a club staff survey I administered, behavioral reports from school-day teachers, school attendance records, and data on office referrals.

All of these data have limitations. My field notes and the tools I developed to survey club teachers may have been influenced by my involvement in funding the afterschool program and creating the club. The usefulness of the school data is impaired by the fact that I could not compare Minecraft LiM participants with similar non-participants with low test scores or

correlate data over time. Furthermore, it is not possible to separate the effects of Minecraft LiM from those of the other interest clubs in the afterschool program or, for that matter, from any other aspect of the students' lives. Another limitation is that school-year data were available only for first- and second-grade participants; the third and fourth graders participated in this club during the summer session.

Of the 49 first- and second graders served in the first year, two had received multiple office referrals in the eight-week period before each of them rotated into the Minecraft LiM club. Once these students began the club, neither received an office referral for the remainder of the school year. In fact, no club participant received an office referral for the remainder of the school year.

School attendance is an important metric in our state, where school funding is directly tied to average daily attendance. Of the 49 first- and second-grade children who participated in Minecraft LiM, only 30 percent met or exceeded the district average of 95 percent daily attendance during the school year. Chronic absenteeism has been identified as common cause for student underachievement (Carroll, 2010; Coelho, Fischer, McKnight, Matteson, & Schwartz, 2015; Gottfried, 2009). Low attendance may have

played a role in the low literacy test scores that qualified these students for the afterschool program. Additional analysis of the same attendance data found that on the days these students did attend school, 94 percent of them had perfect attendance at the afterschool program. Apparently the struggle for these students was not participating in the afterschool program, but making it to school in the first place.

At the end of the school year, the afterschool program manager asked first- and second-grade classroom teachers to complete an online survey about observed changes in the behavior, homework completion, and classroom engagement of students who had participated in Minecraft LiM. Not all classroom teachers responded; I received data on 72 percent of the students. Only three students were reported as not improved in homework completion, a behavior connected to the LiM habits “Put first things first” and “Sharpen the saw.” Similarly, only three students were reported as not improved in classroom behavior; the rest were classified as either having improved or showing no need. Finally, only two students were identified by their classroom teachers as showing no improvement in classroom engagement, an area the LiM habits “Be proactive” and “Begin with the end in mind” might influence.

After working with the first- and second-grade students, one of the Minecraft LiM teachers wrote in the year-end survey that students “had great suggestions on the ways they could incorporate the seven habits” and displayed “enthusiasm with sharing and writing their ideas.” All three club teachers reported having observed the students making better choices during their time together. The lead teacher wrote, “I remember at the beginning of the rotation, students were not interested in writing at all. After a few days of writing, they always looked forward to it.” Thus, club teachers and classroom teachers alike reported signs of increased student engagement. Additionally, in the end-of-year survey, staff reported strong feelings of connectedness to others in the program, providing evidence of positive relationship building, one of the key elements of CYD.

Applying technology to develop leadership in a CYD framework gave afterschool teachers instructional decision-making guidelines for tasks that encouraged the children’s creativity and autonomy.

## Applying Leadership and Creativity in a Virtual World

Applying technology to develop leadership in a CYD framework gave afterschool teachers instructional decision-making guidelines for tasks that encouraged the children’s creativity and autonomy. The evidence, limited though it may be, suggests that Minecraft LiM participants had begun to internalize the LiM curriculum in the program, in the classroom, and even in the community. In their writing, students showed awareness that their creations could affect the experiences of others. Protected by safe, healthy spaces—both virtual and real—participants seized opportunities to express their creativity and demonstrate their understanding in personally meaningful ways. Collaborating with peers to articulate project goals and solve problems while sharing equipment gave children opportunities to apply their leadership strengths while stretching to become better at the seven LiM habits. As in the sixth key CYD element, community connections were important. The club teachers attributed the students’ success, in part, to the assistance of community leaders in providing local context for the application of good leadership habits.

Minecraft and similar virtual reality platforms that facilitate creation and experimentation can be important spaces for learning. However, their strong appeal could lead elementary-aged children to overuse or misuse these platforms, with no clear educational return on the time invested. The teacher’s role in structuring learning, monitoring use of the tools, and providing feedback is a critical piece of instructional design. Elementary-aged children are likely to need more clearly defined guidelines for technology use than older students.

As can happen in any extended activity in early childhood settings, children did not always follow all the rules. Discussions over where to place a door or how tall to make a structure could grow heated and even draw tears. In such situations, the club teacher and her assistants drew on LiM’s seven habits to help students resolve the conflict. On any given day, as club teachers watched lines of text scrolling on the chat windows and listened to the animated conversations happening around the

room, they were continually reminded that Minecraft's open-ended creative potential can require cocreators to rely heavily on one LiM habit in particular: "Seek first to understand, then to be understood." Adult leaders and young participants in Minecraft LiM formed positive relationships, as emphasized in CYD's key elements. When that happens, then all voices can be heard during the process of creating and learning.

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