# Game Changing Strategies during Distance Learning

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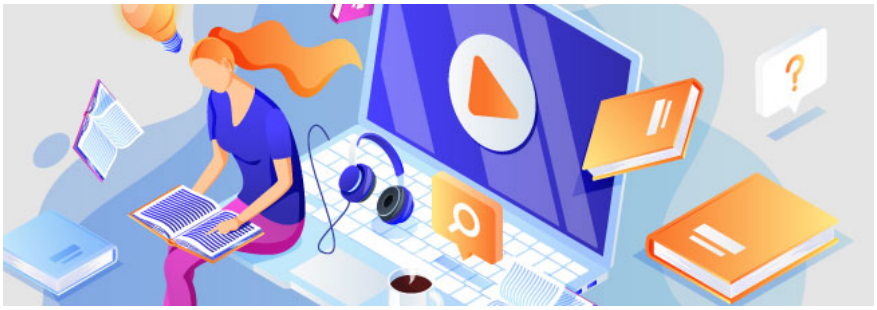

by Stacy Brown, August 2020

As school librarians, we empower other educators to tackle technology integration and co-strategize innovative plays to motivate every learner to want to get in the game. In the pandemic era, however, the rules have changed. One question that has weighed heavily on the minds of many has been this: How will we continue to reach our community, encourage connection, and support the learning while physically apart from one another? Fortunately, we are resourceful by the nature of our profession and with a little ingenuity, we can and will continue to do all of the above. Below I will share a variety of playbook strategies that can be modified to inspire distance learners to connect, create, and learn.

## Coding to Build Community

### Sequences

You don't have to be a computer science major to leverage exposure to coding as a community-building strategy. Sequencing in relation to coding is to put commands in the correct order so that the commands can be understood by a computer to perform a specific task (Code.org). Collaboration to create a Rube Goldberg machine mimics this concept. A Rube Goldberg machine is a contraption that is built to accomplish a simple task through a series of complex steps (https://www.rubegoldberg.com/). As a literary connection to introduce this concept, Laura Numeroff's picture books written as circular stories, such as If You Give a Pig a Pancake, demonstrate how one action leads to another action. With the school librarian acting as "head coach," lead a brainstorming session that starts with an end goal. Then, collaboratively list a series of steps that will result in accomplishing the end goal. Discuss the supplies that students have available at home to accomplish those steps. A shared Google document is a great way to track this information. Based on which participant has various supplies readily available, assign tasks, and require individuals to video the completion of their assigned step in the process. Provide a deadline to submit the video clips to the school librarian via email, Dropbox, or Google Drive. Then, the librarian drops the video clips into iMovie or another video editing software in sequential order to create and share a digital version of a Rube Goldberg machine. It is a collaborative learning touchdown.

### Algorithms

Building upon the above sequencing concept, algorithms are a specific sequence of instructions for a computer to accomplish a specific task (Code.org). While physically apart from one another, students can use LEGOs to build a maze in which one LEGO figure has to reach another LEGO figure. With video conferencing technology, a learner shares their maze and challenges another student to write down directional arrows onto paper to attempt to solve the maze. Calling out the sequence of commands that the "programmer" has written on paper, and having the creator of the maze test it out, will allow learners to debug the code together if the LEGO figure does not successfully reach the other LEGO figure. When the maze is solved correctly, the learners will have jointly created an algorithm.

### Functions and Parameters

More complex coding concepts, such as functions and parameters, can be explored through musical partnerships. Code.org defines a function as a named group of programming instructions and defines a parameter as an extra piece of information that you pass to a function to customize it for a specific need. With a little imagination, students can think of a song as being similar to a computer program. They can enter into the school librarian's "digital recording studio" (Zoom, for example) and listen to a

song to identify the function (chorus). In instances in which the chorus is not exactly the same every time, the variation is known as the parameter. Teaching learners to define the chorus in a song, allows the listener to represent the chorus over and over again without having to write it out each time and reduces having to correct mistakes in multiple locations. The classic song "Old MacDonald Had a Farm" demonstrates this concept in which a different animal (parameter) is used within the chorus (function). More modern songs, however, can be used to demonstrate these concepts as well, such as the song "The Greatest Show" from the hit movie, The Greatest Showman. Once students can identify the parameters and functions within music, inspire students to write their own lyrics integrating examples of functions and parameters and challenge their peers to identify them. Each of the above strategies encourages teamwork and a collaborative spirit.

## Sometimes It's All Fun and Games

**Virtual Book Clubs**

Gamification promotes engagement and community in distance learning. When physically in school, many of us host regular book clubs. With distance learning, gamifying the book club experience has become a creative solution for rallying a reading culture and bringing a community together. It is important to acknowledge those readers who come to the virtual book club having read the book to completion by referencing events in the story. However, it is equally important to ensure inclusivity by being mindful of students who may not have been able to read the book in time due to lack of access to a physical copy of the book or an ereader, distractions within their household, or little support for struggling readers. Whatever the reason may be, there are sure to be instances in which someone who wishes to participate will feel uncomfortable for not having read the complete book. In a distance learning format, expand the playing field by gamifying the experience! Examples include playing virtual book bingo, guessing which emoji visuals represent which book title, acting out scenes for book charades, doing reading challenges, and taking book personality quizzes as a starting point for recommending good reads within the book club. These activities that celebrate reading encourage all potential players to get into the game.

**Reinventing Assessments**

Huddle up and support teachers to reinvent the assessment process with gamification. In this process, learners select a gaming tool to create an assessment that demonstrates their content knowledge. For example, some of our sixth graders created a game in Minecraft that taught players the different parts of speech. When their peers hopped in the minecart, they would encounter signs that asked them questions, such as "What is a verb?" If they thought the answer was on sign A, they could go to the left and proceed to the next question. If they thought the answer was on sign B, they would go to the right and have further verb review creatively produced via Minecraft. By creating a roller coaster ride in a minecart, these students simulated a learning journey for their peers to reinforce the concepts that they had learned in class. Partnering with teachers to support the use of gamification through a menu of tools empowers students to show what they know and learn from one other.

**Tech Tool Fluency**

As more distance learners are relying on Google Tools, encouraging fluency in these tools with increased usage helps level the playing field. Google Slides makes for a great "choose your own adventure" style gaming tool. By creating a series of slides and inserting hyperlinks from one slide to another depending on the path (or link) that the player chooses, an interactive game is born. Students can create their own version of a game centered around specific content and take turns playing their peers' games. Even though the content area is the same, the games will have their own unique creative details. For example, in fifth grade social studies our students learn about the Civil War. Rather than memorize facts about the Civil War from the textbook, over the years, I have partnered with the teachers so that students learn about the Civil War by taking their class notes (and their textbooks, if they choose to do so) and creating interactive games for their peers in which they re-imagine themselves as a person alive at that time in history. Game players have to make difficult decisions relevant to that time period with accurate historical data. Gamify with Google and everyone wins!

## Engineer the Learning to Be Awesome

**Design Build Process**

Engineering lends itself well to promoting students as explorers, content creators, givers and receivers of peer feedback, and can serve as a form of assessment. Marina Umaschi Bers, a co-founder of KinderLab Robotics, breaks down the engineering design process into a series of steps. These steps include ask, imagine, plan, create, test, improve, and share. She notes that students can effectively enter into this design process at any phase of the process (Bers 2018). During distance learning, upper elementary science students, for example, constructed 3D models of the planets out of common household items to demonstrate their acquired knowledge from their solar system unit.

**Content Integration**

Physics students can be challenged to engineer an object that demonstrates Isaac Newton's laws of motion. One example includes engineering a pom pom launcher to demonstrate Newton's First Law of Motion, which states that every object will remain at rest unless compelled to change its state by the action of an external force. An

object (the pom pom) will remain at rest until acted on by an unbalanced force (a tap of the finger). Challenge students to build a Newton's Cradle to prove Newton's Third Law of Motion, which is that for every action, there is an equal and opposite reaction. There are a variety of building materials that can be used, and supplies may vary significantly from one household to the next. Integrate into the process a time by which students will take inventory of their at-home stash of craft supplies, usable household items, and toys that can be repurposed, all of which can be valuable to the design-build process. Another option to ensure accessibility to supplies includes creating maker kits that students can check out and take home. Kits can include scissors, card stock, colored pencils or crayons, pipe cleaners, Q-Tips, masking tape, popsicle sticks, and more. Bagging up common craft supplies for mobility can be a starting point for sparking creativity at home.

**Relevance**

Make real-world connections and leverage current events to tell a story and persuade learners to engineer a solution for an existing problem. For example, after Hurricane Florence, a housing shortage occurred in North Carolina. Share an audio clip of a news piece reporting on this devastating event to hook students into a challenge to build a disaster-proof housing structure. National Public Radio has a robust collection of short podcasts in which we can listen to testimony about the difficulties people face acquiring new housing after a natural disaster. Prior to building, provide students with a deadline for creating a blueprint of their design. What materials will the structure be made of and why? Schedule a presentation hour via video conferencing and with Stanford's d.school model, require peer feedback using the I Like, I Wish, What If structure. Thinking with our hands allows learners to engineer for assessment.

Assess the impact that you can have. How will you continue to be a game changing force within your community? What strategies will you employ to maintain strong connections, support the learning, and cultivate students as content creators? Teaming up to support distance learning is a win-win. Tweet your strategies to #SLTechPlaybook.

**Work Cited**

Bers, Marina Umaschi. *Coding as a Playground: Programming and Computational Thinking in the Early Childhood Classroom.* Routledge, 2018.

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