Digital Tools to Empower 21st Century Learners

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“The conversation has shifted from *whether* technology should be used in learning to *how* it can improve learning to ensure that all students have access to high-quality educational experiences.”

-U.S. Department of Education
Universal Design for Learning Guidelines

**Affective Networks:**
*The Why of Learning*
- **Engagement**
  For purposeful, motivated learners, stimulate interest and motivation for learning.

**Recognition Networks:**
*The What of Learning*
- **Representation**
  For resourceful, knowledgeable learners, present information and content in different ways.

**Strategic Networks:**
*The How of Learning*
- **Action & Expression**
  For strategic, goal-directed learners, differentiate the ways that students can express what they know.

Multiple Means of Representation

“Learning is impossible if information is imperceptible to the learner, and difficult when information is presented in formats that require extraordinary effort or assistance.” (CAST, 2011)
as unique as their fingerprints.
Mitochondria Video:

Mitochondria Text:

Mitochondria Audio:
Cells Are the Unit of Life
9 Animal Habitats

Students can create an ebook showcasing where an animal lives.

Your students can probably tell you a lot about where they live. As they learn about different animals and what makes each one special, students can design one page for a collaborative ebook that showcases the habitat of the animal they are studying. Each student page can be used for a multi-page class ebook that describes the habitats of animals from around the world.

Students can create an animal habitat ebook to show their reader where an animal lives. You might ask students to include:

- Name of an animal
- Description of where the animal lives
- Photo or illustration of a map
- A student video describing the habitat
- A list of other animals that share the same habitat
- Key features that make the habitat unique

Providing students with choices for which animal they will study can help maintain engagement in the task. If you are studying a particular region with your students, you might provide a list of animals for them to choose from that relates to your learning goals. For example, if your students are studying the tundra, you might ask them to choose from a set list of animals like: an arctic fox, caribou, or ermine.

Giving students an audience for their work can take many forms. Your students can share their work with classmates, schoolmates or families. Alternatively, you might reach out to an organization that supports conservation of animals and share your creations with their team.

In this example of an animal habitat ebook, the cover includes the name of the animal and the habitat a student is profiling.

You might ask students to profile animal habitats in your community.

An open letter may not be the best way to air your grievances, as ex-Yelp employee Talia Jane demonstrated,
Multiple Means of Engagement

“Even though we have one of the most diverse countries in the history of the world, and even though it's the 21st century, we still design our learning environments like textbooks for the average student.” ~Todd Rose (“The Myth of the Average” TED Talk)
Design open-ended activities that encourage student choice based on interest (in the topic and/or technology)

**Activity Objective:** Your task this week is to design a digital media product that enhances student learning. Your design should draw from what you learned in Week 2 about how digital media can enhance student learning and you should use one of the tools you explored and evaluated from Week 1.

**Activity Instructions:** Choose a topic that your students have struggled with (e.g., why do leaves change color?) or that helps you achieve a learning goal (e.g., my students are not engaged in writing arguments to support claims). Make sure the topic is simple and easy to demonstrate through digital media. For example,
Hello!

I am Torrey Trust

I am here because... I am excited to learn from everyone in EDUC 593A

Superpower

My superpower is: Writing
Communication Stations

Station 1
Binary Code
Bracelet

Station 2
Roller Robot

Station 3
Braille Card

Station 4
Morse Code Signals

https://fictionalstoriesinscience.com/
Using Tech to Engage Learners

Esha @eshaaaam · Nov 4
#teentober #booksnaps #chsread
Angie Thomas - The Hate U Give
Jennifer Niven- Holding up the Universe

lukas gene bjorgo @BjorgoGene · Nov 3
Who knew #BookSnaps could be so much fun! #SC356

One of my favorite quotes!
Multiple Means of Action & Expression

“In reality, there is not one means of action and expression that will be optimal for all learners; providing options for action and expression is essential.” (CAST, 2011)
WHAT IF I TOLD YOU

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THE TILT OF THE EARTHS AXIS
<table>
<thead>
<tr>
<th>Make a Movie or Music Video</th>
<th>Design an Interactive Video</th>
<th>Create a Screen Recording</th>
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<td>Record a Podcast</td>
<td>Create Music</td>
<td>Tell a Story</td>
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<td>Make a Mindmap</td>
<td>Code a Song or Game</td>
<td>Design an Infographic</td>
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<td>Create a Meme or Poster</td>
<td>Design a Comic</td>
<td>Create a Graphic or Sketchnote</td>
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<td>Put Together a Slideshow</td>
<td>Curate a Digital Wall of Resources</td>
<td>Build a Website or Blog</td>
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<td>Design a Timeline</td>
<td>Build a Virtual Tour or World</td>
<td>Create a Whiteboard Presentation</td>
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October Reading Response Activities
Read for 15 minutes each night.
You need to complete at least 3 activities by Oct. 31, 2019.
Color in the box when you have finished the activity.

Directions
Add All Your Links HERE

4 C's Digital Learning Menu

Communication
1. Summarize your learning using the digital tool of your choice. Feel free to use multiple types of media. (ex: video, presentation, drawing, Twitter, mindmap).
2. Teach a concept from this week’s learning to another student using the digital tool of your choice. Feel free to use multiple types of media. (ex: screencast tutorial, YouTube video, diagram, podcast).

Collaboration
3. With a partner, discuss the topic/question, then together create a digital representation of your thoughts. Ideas, questions and reflections. (ex: Slides, Padlet, drawing, video).
4. With your team, discuss possible solutions to the problem together, create a digital representation of your solution using the tool of your choice. (ex: sketch, diagram, Docs, Slides, Sites).

Critical Thinking
5. Using the Image provided by your teacher, infer what happened in the picture. Retell what you think happened in your own words and expressed with the digital tool of your choice. (ex: timeline, diagram, digital story).
6. Research a current issue that you are passionate about. Using your research as evidence, craft an argument using the digital tool of your choice to assert your opinion with ideas to solve. (ex: writing, video, podcast).

Creativity
7. List as many uses for a paperclip that you can think of in ten minutes. Share with a partner and push your team to think of 20 more!
8. Reinvent school! If school could be anything you wanted it to, what would it look like? What would you learn? How would you learn it? Create a model of your new school using the digital tool of your choice.

ShakeupLearning.com
Makerspaces and Equal Access to Learning

Makerspaces can democratize learning, create a culture of participation, allow for teaching with visual cues, offer thematic planning opportunities, and facilitate differentiated instruction.

By Laura Fleming & Billy Krakower
July 19, 2016

Maker Spaces: What Can They Do for ELL Students?

By Peter DeWitt on June 28, 2015 9:45 AM

Today's guest blogger is John Spencer, an author and speaker who recently left the classroom after eleven years as a middle school teacher to become a full-time assistant professor at George Fox University.

Makerspaces: Hands-on Learning for Students of All Abilities

Library Resources | August 30, 2017
“The conversation has shifted from *whether* technology should be used in learning to *how* it can improve learning to ensure that all students have access to high-quality educational experiences.”

-U.S. Department of Education
20 Digital Tools & Apps for Your Classroom
<table>
<thead>
<tr>
<th>1. Empowered Learner</th>
<th>Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</th>
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<td>2. Digital Citizen</td>
<td>Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</td>
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<td>3. Knowledge Constructor</td>
<td>Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.</td>
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<td>4. Innovative Designer</td>
<td>Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.</td>
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<td>5. Computational Thinker</td>
<td>Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.</td>
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<td>6. Creative Communicator</td>
<td>Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</td>
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<td>7. Global Collaborator</td>
<td>Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.</td>
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Empowered Learner Tool: Diigo
Empowered Learner Tool: Twitter
Empowered Learner Tool: Meme Generators (Google Drawing Template)
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teaching alone in your classroom

sharing ideas and thoughts you learned from F2F and digitally from your PLNs with your students
Empowered Learner Tool: Meme Generators (Google Drawing Template)
Digital Citizen Tool: Unsplash
Digital Citizen Tool: Wix
Knowledge Constructor Tool: **Wakelet**
Knowledge Constructor Tool: Webjets
Knowledge Constructor Tool: Hypothes.is (free) or Perusall
Innovative Designer Tool: TinkerCad
Innovative Designer Tool: Mindmup (or Google Drawings)
Innovative Designer Tool: Basecamp
Computational Thinker Tool: DataBasic.io

DataBasic is a suite of easy-to-use web tools for beginners that introduce concepts of working with data. These simple tools make it easy to work with data in fun ways, so you can learn how to find great stories to tell.

- **WordCounter**: analyzes your text and tells you the most common words and phrases.
- **WTFcsv**: tells you WTF is going on with your .csv file.
- **SameDiff**: compares two or more text files and tells you how similar or different they are.
Computational Thinker Tool: **Pencil Code** (or Scratch)
Computational Thinker Tool: Google Forms
Creative Communicator Tool: KnightLab Storytelling Projects
Creative Communicator Tool: Adobe Spark
Creative Communicator Tool: Google Tour Creator
Global Collaborator Tool: Slack
Global Collaborator Tool: **Exploring By the Seat of Your Pants** (Google Hangouts)
Global Collaborator Tool: Flipgrid

9 NEW WAYS TO USE FLIPGRID

1. Sharing book reviews: With Flipgrid’s new augmented reality (AR) feature, classrooms and classroom libraries can use the video QR code to create an engaging way for students to share book reviews. After a student records their review, the teacher can print the QR code and tape it on the book, and the student’s classmates can use their devices to scan the code and watch the review as a way to help them decide if they’d like to read the book.

2. Practicing world language skills: Flipgrid makes it possible for teachers in different districts and different countries to collaborate. For world language teachers, this creates opportunities for students to practice their speaking skills with a larger group than just their class. Students can post videos to get practice with the vocabulary they’re learning, and instead of being limited to practicing with the people in their physical classroom, they can engage and build their skills with other students around the world studying the same language or have conversations with native speakers of the language.

3. Increasing accessibility for all students: Flipgrid has expanded many of its accessibility features to ensure that all students can participate. Students can use closed captioning when viewing videos, which also generates a full transcript for each video. Microsoft’s Immersive Reader can be used within both the closed captioning and any text within a topic to read the texts aloud and break up words into syllables for easier decoding.

4. Inviting outside speakers: Using Guest Mode, teachers can invite guest speakers to participate in classroom discussions. Guests can watch student videos and post their own videos. This option provides a way for experts in a field to share their knowledge asynchronously, with students posting videos of their questions for the expert to answer at a convenient time in a video response. STEM teachers, for example, could invite engineers or scientists to discuss their careers and research and to answer student questions.
More tools!

- Online Tools for Teaching & Learning Database
- Digital Tools for Reading & Writing
Questions?
THANK YOU!