Supporting Technology Integration Through Design

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Why Design?

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- “Interplay between theory and practice” (Mishra & Koehler, 2006)

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- Need to adapt to new tools and methods

"A design is a structure adapted to a purpose."

-Perkins, 1986

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"Knowledge as Design"

Why Design?

- “Interplay between theory and practice” (Mishra & Koehler, 2006)
- Need to adapt to new tools and methods

→ Developing flexible knowledge structures that can adapt to a purpose

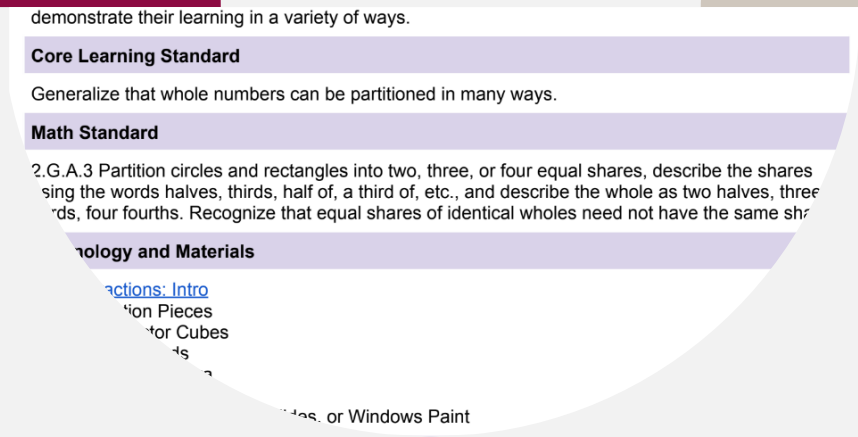
Design-Focused Technology Integration Course

- Learners:
  - Master's level education
  - about 75% current K-12 teachers
- Online, Asynchronous
- 8 Weeks, 3 Credit Hours

Anchor Project: Ed Tech Portfolio

- Statement on Teaching, Learning, and Technology
- Personal learning plan infographic
- Three learning designs
- Learning design media explanation
- Digital equity and inclusion blogpost
- Creative Commons assets and license

Learning Design


demonstrate their learning in a variety of ways.

Core Learning Standard

Generalize that whole numbers can be partitioned in many ways.

Math Standard

2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares sing the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three rds, four fourths. Recognize that equal shares of identical wholes need not have the same sh

nology and Materials

actions: Intro
tion Pieces
for Cubes
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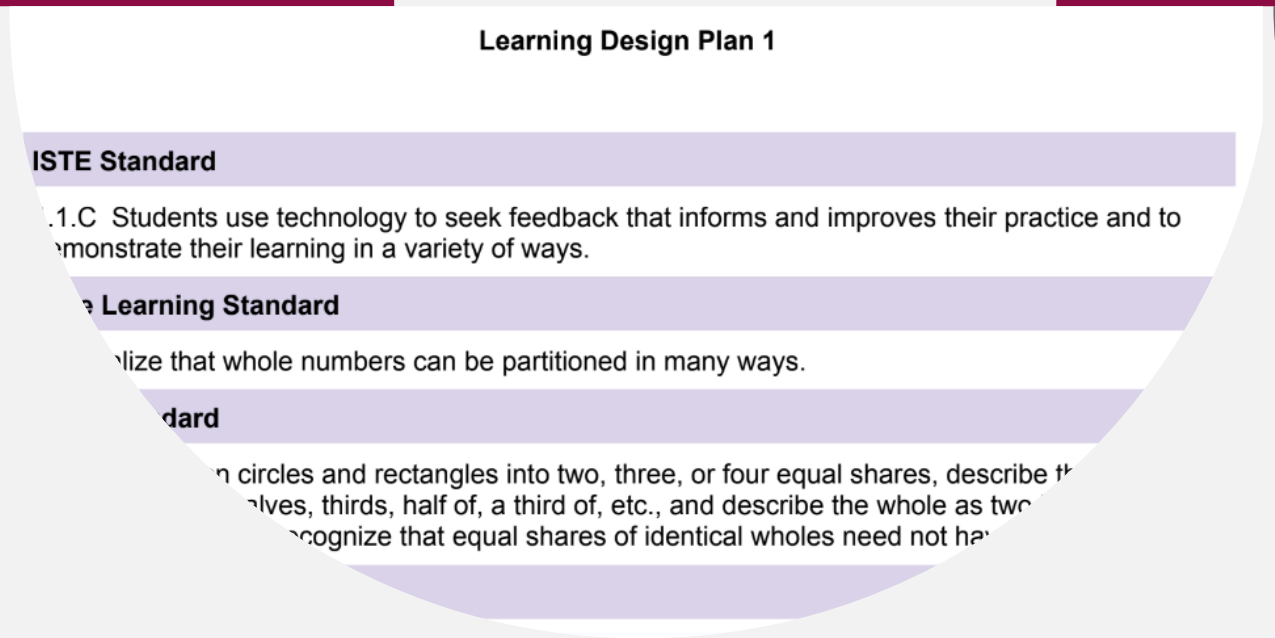
des, or Windows Paint

Multimedia Design

NM STATE UNIVERSITY

Learning Design



Learning Design Plan 1

ISTE Standard

.1.C Students use technology to seek feedback that informs and improves their practice and to emonstrate their learning in a variety of ways.

Learning Standard

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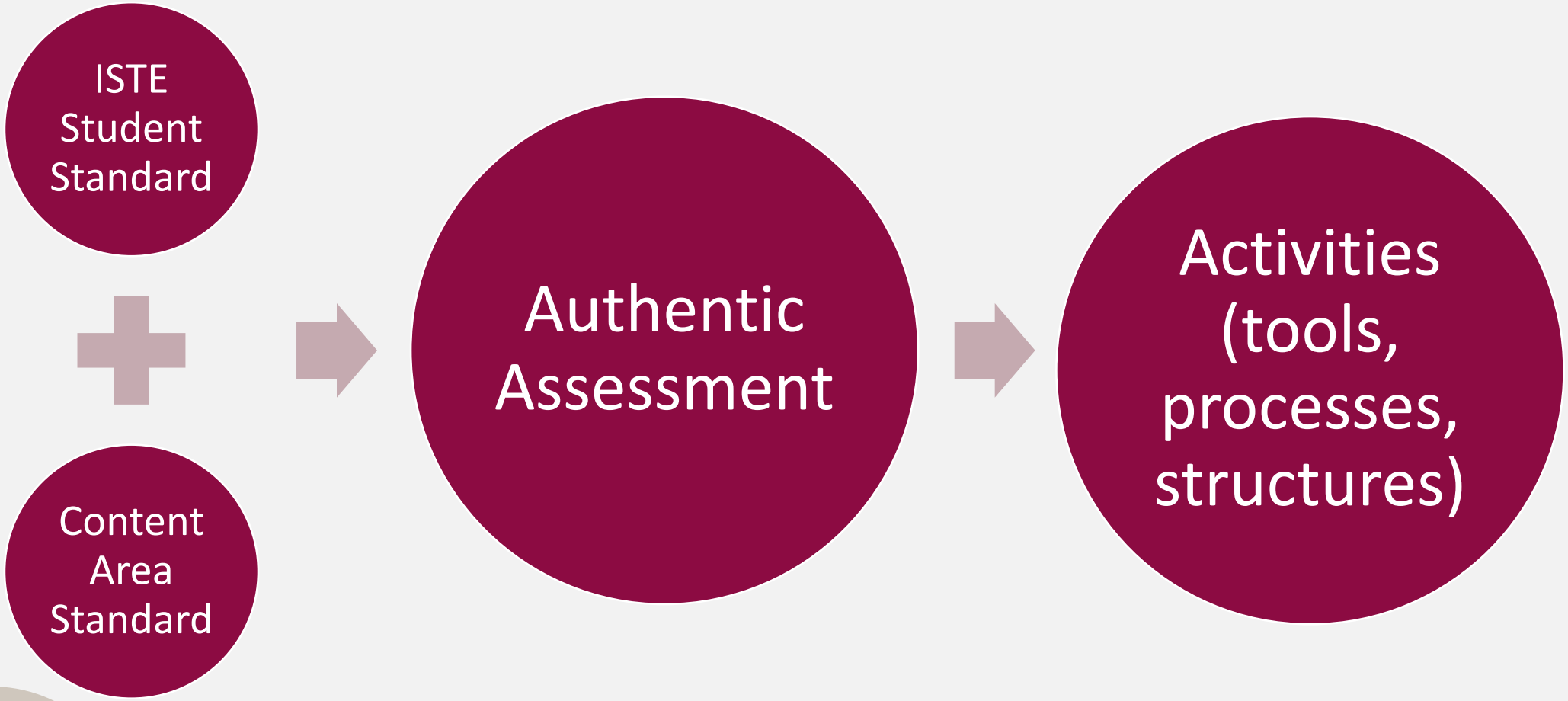
Learning Design Includes:

1. Content Area Standard
2. ISTE Student Standard
3. Evidence of Learning (Authentic Assessment)
4. Tools (technologies) and activities

Backwards Design



(built on Wiggins & McTighe, 2005)

ISTE Standard

YouTube

Knowledge Constructor 3c: Curate Information (ISTE Standards for Students)

1.3c Knowledge Constructor- Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

0 0

1mo

Common Core State Standard

corestandards.org

English Language Arts Standards " Writing " Grade 1 " 6

W 1.6- With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W 1.7- Participate in share research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence

1mo

Assessment

app.bookcreator....

Book Creator app for Chrome

Students will design and assemble a "how-to" book using the digital tool, Book Creator. Students will need to research information on their desired topic in order to create their final product. This will be a formative assessment to the writing standards W 1.7 and ISTE standard, 1.3c.

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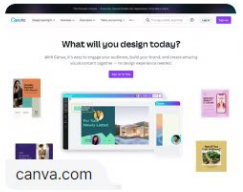
Activities



canva.com

*Brainstorm “How To” Topics- Create a class Flipgrid of topics chosen.
*Create a Mind Map using Canva- Once individual topics are chosen, students will use Canva to create a mind map of what they want to write about in their How-To page.
*Research- Students will go to the school library to find information on the topic they have chosen.
*Sequencing- Students will use a graphic organizer to write their information they have researched. They will then take pictures to use in their final book creator.

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Iste Standards

1.5.B - Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making

1.6.D - Students publish or present content that customizes the message and medium for their intended audiences.

Content Area Standards

LC.2.MD.D.10a - Analyze data by sorting into categories established by each question.

LC.2.MD.D.10b - Organize data by representing categorical data on a pictorial graph or bar graph.

LC.2.MD.D.10c - Identify the value of each category represented on picture graph and bar graph or each point on a line plot.

LC.2.MD.D.10d - Compare the information shown in a bar graph or picture graph with up to four categories. Solve simple comparisons of how many more or how many less.

Assessment

Students will present their own bar graph to the class and describe their findings to the class. They will accurately answer the questions with their graph values; value, most, least, and comparison questions. Scored on rubric

Learning Design Storyboard

COLLECTING	CREATING	INTERPRETING	PRESENTING	SHARING
				
Students will create a Google Survey to send to 1 class via Google Classroom. They will also interview 12 people in person. They will combine both sets of data.	Students used Visme to create their graphs because many of them have issues with dexterity and the program creates the graph neatly for them to read the data.	Students answer questions about value, most, least, and comparisons using created graphs.	Students present their graph and discuss the findings to their questions.	Students email their graphs and findings to participants.

Stage 1 – Desired Results

ESTABLISHED GOALS

2nd Grade GLEs:
SS 2.1.4 Explain reasons for local, state, and national celebrations, cultural events, and traditions and their significance

ELA 2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).

ISTE Standards:
1.3a Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

1.6d Students publish or present content that customizes the message and medium for their intended audiences.

Transfer

Students will be able to independently use their learning to…

- Describe Louisiana's history and tradition of Mardi Gras.
- Use active, guided research techniques to locate information for a specific purpose.
- Effectively collaborate and use active listening and speaking skills.
- Demonstrate information learned through research by means of technological devices and digital platforms.

Meaning

UNDERSTANDINGS
Students will understand that…

- Mardi Gras is a big part of Louisiana's history and tradition
- Mardi Gras involves traditions and symbols that have meaning
- We must use the internet carefully to find reliable sources of information.
- We can use active listening and speaking skills to collaborate with others.
- We can creatively demonstrate our understanding to others through digital means.

ESSENTIAL QUESTIONS

- Why does Louisiana celebrate Mardi Gras?
- What do common Mardi Gras symbols represent? (king cake, beads, etc)
- How can we use the internet to find out more about a topic?
- How can we effectively collaborate with others to plan something?
- How can we use iMovie to create a commercial?

Acquisition

Students will know…

- Mardi Gras began long ago and has been an important

Students will be skilled at…

- Researching a topic

	Louisiana tradition for many years. • Mardi Gras involves several symbols that have an important meaning. • Mardi Gras is an important holiday in Louisiana.	• Communicating research findings creatively through digital means

Stage 2 – Evidence and Assessment

Evaluative Criteria	Assessment Evidence
• A rubric will be used to determine student use of technology, student collaboration, and research skills. • Students will also self-assess these areas.	PERFORMANCE TASK(S): The students will research the topic of Mardi Gras through carefully guided research sessions. The students will work in groups of 3 to collaborate and share information that they have discovered. They will then create a commercial together (in their groups of 3) to explain Mardi Gras and convince travelers to visit Louisiana for Mardi Gras. The students will film and create using iMovie within their groups of three. The iMovie will be shared with each other and our sister school in Wyoming. OTHER EVIDENCE: ✓ Informal observation of students during research phase ✓ Exit tickets to gauge student confidence and understanding ✓ Final iMovie will be assessed for content understanding and technological understanding.

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

1. TTW activate prior knowledge of Mardi Gras by creating a bubble map with student ideas.
2. TTW introduce the online book Mimi's first Mardi Gras, TSW follow along on their iPads. Reading skills will be reviewed at this time, such as "touch the word that has a long a sound."
3. TTW explain that we will now do some research about Mardi Gras. TTW review chromebook guidelines and safety rules. The students will be instructed to follow the teacher's Google page to locate sources of information as well as write important information on their recording sheet. TT and TS will discuss how we might determine if a source is reliable or not. If a student happens upon a site not included in Google Classroom, the teacher and student together can evaluate reliability.
4. TSW, using the recording sheet, research mardi gras using the teacher's Google homepage on their chromebooks. The Google page includes guiding questions and links to safe, reliable websites.
5. Through email and weekly newsletter, the teacher will communicate the GLEs and project to the parents. The teacher will ask parents to send in photos on themselves and their families at upcoming Mardi Gras parades. The teacher will also send home a photo release to be signed by the parents to ensure that she has written permission to use photos in the projects. The teacher will also request donations of Mardi Gras props to be used by the students, such as beads, masks, etc.
6. Student will then assemble in assigned heterogeneous groups of 3 and review information collected, round robin style. The students will write all information on chart paper that they want to include in their commercial. With the guidance of the teacher, the students will create and practice the commercial.
7. The students will create the commercial to convince others to come to Mardi Gras in Louisiana using iMovie on their iPads. They will be encouraged to use their creativity and humor, as well as include facts in their commercials. The teacher will be carefully guiding the use of the iPads and iMovie. The teacher will offer advice and recommendations.
8. The students will each complete a self-assessment and group assessment.
9. The Mardi Gras commercials will be shared with our sister school second graders in Wyoming so that they can learn about Mardi Gras.

Student Self-Assessment

I used my chromebook and my iPad responsibly (not putting it near water bottles, holding it tightly with 2 hands, placing it on clean, dry surfaces).	Yes	Sometimes	No
I followed the links and instructions on Google classroom and talked with my teacher about other links/websites if I was unsure.	Yes	Sometimes	No
I participated in Roundrobin discussions with my group to put all of our research together.	Yes	Sometimes	No
I listened to my teammates and also shared my own ideas.	Yes	Sometimes	No
I helped plan for the commercial and practiced with my group.	Yes	Sometimes	No
We problem solved to find the best solutions when we were stuck. We asked our teacher for help when needed.	Yes	Sometimes	No
I learned how to use iMovie and used it with my group. We took turns filming, acting, and editing.	Yes	Sometimes	No

Multimedia Design

Practiced through:

- Website
- Personal Learning Plan Infographic
- Learning Design Media
- Blogpost

Emphasis:

- Cognitive load theory
- Cognitive impacts of contrast, proximity, coherence, alignment, hierarchy, white space
- Selecting appropriate media format for intended communication
- Technical skills for creating and sharing media effectively

HANNAH WATTS

TEACHING. LEARNING. TECHNOLOGY.

Learning is the inquiry-driven process of discovering new knowledge.

Teaching, then, is the process of facilitating learning by asking questions that allow learners to construct new understanding.

Good teaching involves appropriately utilizing technologies to transform learning and connect learners with themselves, their peers, and the world around them

My Personal Learning Plan

Focus ISTE Standards:

2.5 Designer
- **2.5a -** Use technology to create, adapt and personalize learning experiences

2.6 Facilitator
- **2.6b** - Manage the use of technology and student learning strategies

1. Watch
Learn how to apply ISTE standards in the classroom

- ISTE Standards YouTube Channel
- Teaching Channel - Technology in the Classroom

2. Listen
Edtech Podcasts with tips for incorporating technology

- ISTE Podcasts
- Schoology Exchange - Edtech Podcasts

3. Follow
Tips and tricks for using & managing edtech in the classroom

- Pocketful of Primary
- 10 Standout Teachers on TikTok

"TikTok" by ApolitikNow is licensed under CC BY-SA 2.0

4. Do
Steps to take to stay up-to-date on what's new in edtech

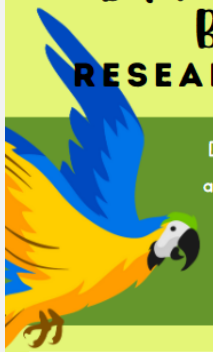
- FutureLearn MOOC - Embracing Digital Technology
- Teacher Social Media Page

Share
Resources for my fellow educators

- ISTE Certification
- Games, Apps, and Sites for Personalized Learning
- How to Create a PLP

By: Lakeisha Bergeron

BIRDS' AMAZING BODIES
RESEARCH REPORT



Do you want your students to learn about birds and their body parts and functions? Do you want them to learn how to research and publish their work to share with others?

Goal & Standards:

The goal of this lesson is to teach students how to use primary and secondary sources to conduct research about birds' body parts and their functions. Students will learn how birds' parts help them adapt to and survive in their habitat.

ISTE 1.3, W.1.2, W.1.5, W.1.7, LS1.1 (LE.LS1A.a, LE.LS1D.a, LE.ETS1B.a)

Essential Questions:

- What makes a bird?
- How do birds use their body parts to survive?
- How do specific birds use their body parts to survive in their environment?
- How do we build our research skills and share our learning?

Performance Tasks:

- TLW use primary and secondary sources, such as nonfiction texts and digital platforms and tools, to conduct research about birds' body parts and functions.
- TLW will write and publish an informative/explanatory text supplying facts about birds' body parts and functions.
- TLW use their knowledge to create a digital diagram of a bird, labeling its essential parts.

Concepts & Skills:

- All birds have key body parts such as beaks and feathers needed for survival.
- A bird's beak and feathers have specific functions to help the bird survive.
- Birds' body parts are designed to help them adapt to their environment.
  - Researching and note-taking
  - Publishing using digital tools
  - Collabrating with peers

Materials & Resources:

- EL Research Workbook
- Primary & Secondary Sources
- Graphic Organizer
- Internet

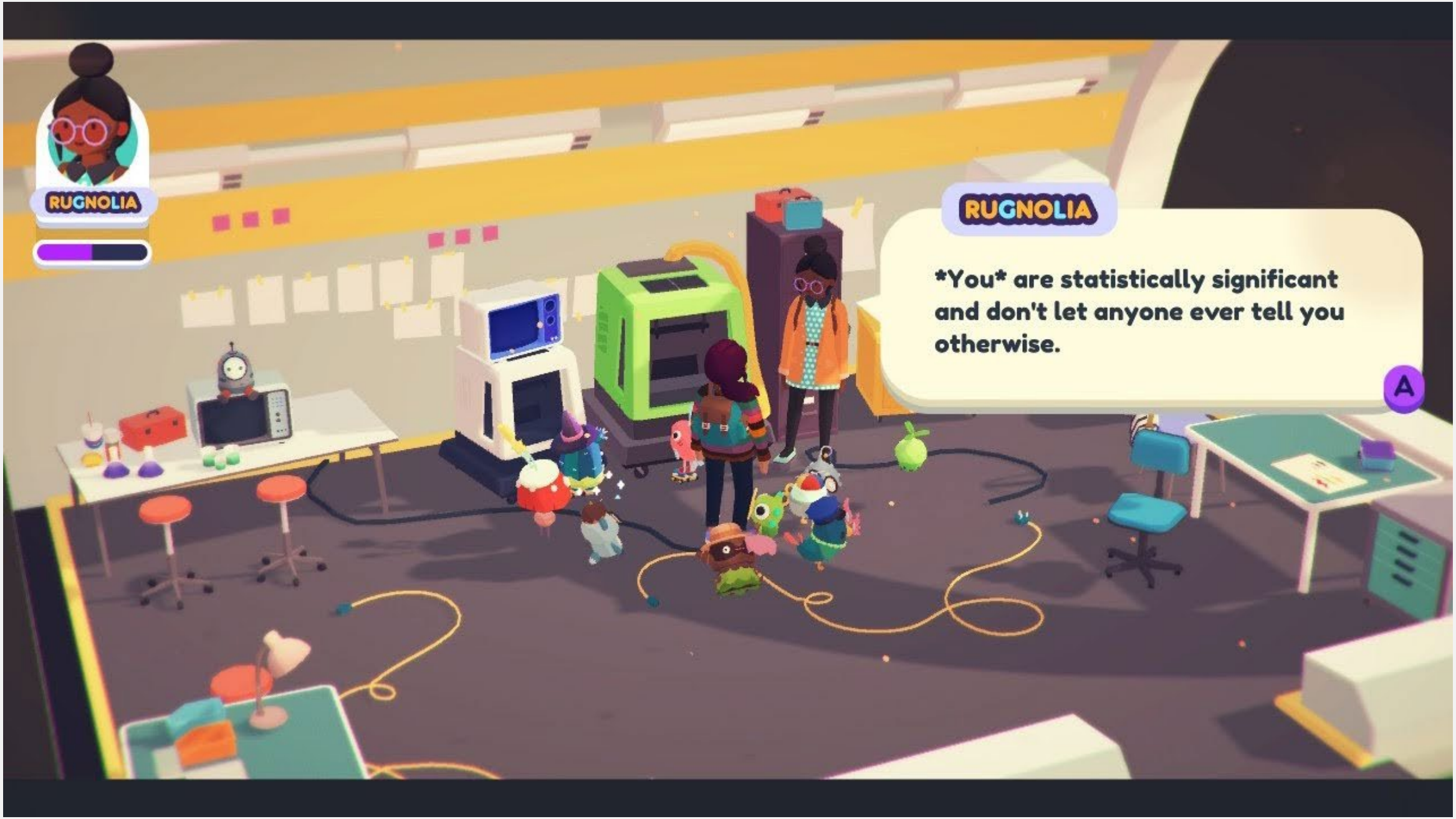
Technology:

- What are students learning from Google Docs?
  - typing skills
  - publishing
  - collaboration
- What are the benefits of using Thinglink?
  - 3D models with active links
  - interactive visuals

Evaluate:

- Organization & Notetaking - organized notes using a graphic organizer
- Published Report - well written and easy to understand with facts from multiple sources
- Digital Diagram - picture with labels to describe bird body parts and functions
- Sample RUBRIC

By: Lakeisha Bergeron


RUGNOLIA
RUGNOLIA
You are statistically significant and don't let anyone ever tell you otherwise.
A

Technology Integration Confidence v. 3

(Gomez, 2020)

t-Test: Paired Two Sample for Means		
	Variable 1: Pre-Assessment Mean	**Variable 2: Post-Assessment Mean**
Mean	2.97	4.06
Variance	0.839	0.395
Observations	16	16
Pearson Correlation	0.703	
Hypothesized Mean Difference	0	
df	15	
t Stat	-6.687	
P(T<=t) one-tail	3.63266E-06	
t Critical one-tail	1.753050356	
P(T<=t) two-tail	7.26533E-06	
t Critical two-tail	2.131449546	

Cohen's d: 1.298

Average Change by Sub-Scale

Sub-Scale	Average Change
Technology Usage	.99
Technology Application	1.26
Technology-Infused Learning	1.14
Technology Literacy and Digital Citizenship	1.23
Technology-Supported Assessment	.83

Student Reflections

1. New perspectives on the why and how of tech use
    1. To transform learning
    2. For creativity and expression
2. Increased confidence in using tech
    1. Using tech to enhance/transform learning
    2. Creating own digital products
    3. Willing to take risks

Tech to Transform Learning

As I understood the backward learning designs, and how technology could amplify or transform learning, I really started to understand the importance of digital learning for students.

I'm now much more thoughtful when deciding how I'm going to integrate technology, and I truly consider how the technology I want to use will impact student learning.

Tech for Creativity

The main thing that I changed with this was that technology can lend to wonder by creating new challenges, offering solutions, and aspiring creativity.

I have learn through this course of the importance of not just assessment, but moving those students into more of a creative and transformative role.

Increased Confidence

My comfort and confidence both increased greatly as I worked on creating learning designs, as well as integrating technology into the learning designs.

Incorporating technology has always been somewhat of a challenge for me, though I am now more comfortable learning new skills along with my students.

I also feel that I grew in my understanding of technology and creating and building upon technology. Never did I believe that I could build a website from the ground up, but I have thoroughly enjoyed learning the process.

REFLECTION

Areas Improved On

-Much more likely to take risks with technology and try new things

-Enjoyed creating new things that represent my ideas and thoughts

Moving Forward

-Have students experience the feeling of accomplishment from creating a digital product from their thoughts and ideas.

-Relax and remember it won't always work out smoothly, and sometimes things are out of my control.

Beliefs

-Belief that technology accentuates learning has become even stronger.

-Through the technology based activities in this class, I see exactly how the use of creativity and technology enhance the learning experience.

Thank You!

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template library