# QUESTING FOR RELEVANCE: EXPLORING STUDENT OUTCOMES FROM CREATIVE ASSESSMENT "QUESTS" IN A GENERAL EDUCATION BIOLOGY COURSE

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# TALK GOALS

- Background of the elements of games that make them work well in the classroom

- Recognize that principles of gaming theory work, even if you aren't using games

- Explore General Education Biology Quests Assignment

WHAT HAVE BEEN THE MOST VALUABLE ASSIGNMENTS YOU HAVE DONE IN YOUR COURSES?

# WHY DO GAMES WORK?

## Some elements of games that may be used to motivate learners and facilitate learning include:

- Story and identity
- Player control
- Opportunities for mastery, and leveling up
- Low risk failure
- Immediate feedback and rewards
- Progress mechanics (points/badges/leaderboards)
- Opportunities for collaborative problem solving
- Step-by-step learning with increasing challenges
- Social connection
- Fun
- Challenges
- Music

# GAMES GIVE STUDENTS CHOICE

Games give students a chance to make choices and take risks they wouldn't normally have

If you aren't using games, you can still find ways for more student autonomy...

- Due dates?
- Assignments?
- Content of course?
- Format of tests?

# GAMES ALLOW SKILL MASTERY

Games require performance before 100% competence

In other words, games encourage students to build mastery slowly

People, especially young adults, will go out of their way to play games, even a single game, for hours on end.

- They will seek mastery of the content in ways they won't seek by traditional studying

# STARDEW VALLEY

## Biography

☆ Outgoing & bubbly, has anxiety
☆ Enjoys cooking & treasure hunting
☆ Collects minerals & vintage wines
☆ Feast of the Winter Star is the best
☆ Loving dino mom, never wants kids

Peach Hill Farm
Sebastian

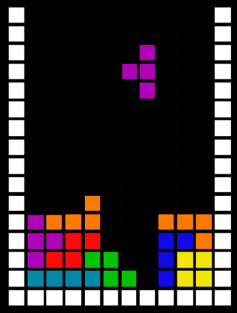**GAMES ALLOW FOR IDENTITY**

Loves And Gifts
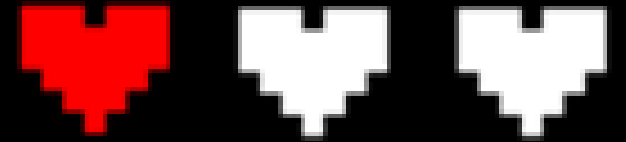
Mair

Chicken    Waffles

Birthday

GAME OVER

Game Over

Let's
try it
again!

# GAMES PROVIDE LOW-RISK TASKS

Bad consequences from games are rarely serious or lasting.

- "It's only a game."

- If you lose, start the game over and try again.

- It's possible to recover within a game and still successfully complete a task.

- Characters and pieces may die, but this is rarely permanent.

- There are no consequences for the player personally.

# GENERAL EDUCATION BIOLOGY QUESTS PROJECT

We did a mixed method analysis of project reflections (N=924) and interviews (n=11) to uncover how and in what ways the quests elicited participant creativity and general emotions.

Increase students' knowledge of local and worldwide scientific issues

Spend time in nature

Apply science in everyday life

# HOW DO QUESTS WORK?

A "quest" is a mini project other than a paper, presentation, or poster, that allows students to use different modalities to build knowledge and skills.

In this course, students complete 3 'base' quests from over 20 quests to choose from.

People could combine the quests in unique ways to earn skill-tree achievements for extra credit

# EXPLORE THE QUESTS

'Save the World' Quests (new!)

Misinformation Scavenger Hunt

Myth Busters!

Neighborhood Clean Up Quest

Outdoor Quests

Night Critters Quest

iNaturalist Quest

Hiking Quest

National, State Park, or Nature Reserve Quest
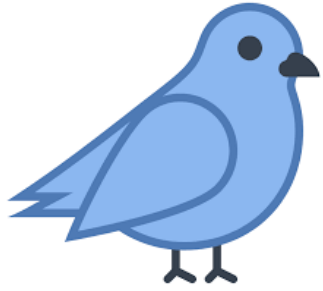
Neighborhood Clean Up Quest

Zoo Documentary Quest

Visit a Special Place Quests



https://drive.google.com/file/d/1OvCM
XxlnYrH7maWMaFOy7-
DkYrKz39Ye/view?usp=sharing

# BADGES/SKILL TREES

Early Bird

Multi-Lingual Badge

Animal Badge

Plant Skill

Friends and Family Badge

Social Media Badge

Tree Hugger

Artist

A KEY PART OF THIS EXPERIENCE FOR STUDENTS IS A FORMAL REFLECTION ON THE QUEST, AND THESE ARE THE SOURCES OF OUR DATA

THESE ARE SOME QUOTES FROM STUDENTS BASED ON THEIR EXPERIENCES...

# QUEST REFLECTIONS

"I honestly came to relaxation with myself and nature. I haven't written anything in a while either, so I really took this time to reflect on 2020 and my mental health. I'm going to do more sit spots."

"Although I was scared before trying it, the plant-based meat was actually really yummy. It isn't the greatest for you to eat meat everyday, meat is expensive, and meat production contributes to higher carbon emission. I'm going to eat more plant-based meat going forward."

"I now actually know a lot of the names of the plants around my house."

# VEGETARIAN COOKING QUEST

"It made me feel good that I was cooking dinner for my family. I thought we could maybe reduce how much meat we eat and include more vegetarian meals into our meal plans ... and I like how I was also contributing to help fight climate change in some little way."

# ANIMAL CROSSING MUSEUM TOUR

This student combines her knowledge of Mandarin language and biology to give a tour of her video game museum of animals.

This assignment double-counted for her Biology and a language course.

"Overall, I'm glad I did this quest. I was able to learn more about biology, Chinese, and me. I never imagined that a video game could help me connect something I find fun to the real world."

https://drive.google.com/file/d/1 8VAIjZpQ0xSi1NUO8yioxqSya 0murhk3/view

**SCAN ME**

# DOC LIKE MOMMY

"This quest added to my thinking by enforcing my thinking that women are underrepresented in the scientific community. I went to my city's public library to find the books that I read, and I was very disappointed by what I saw. It was actually hard to find a book that depicted a girl or woman as the scientist. Everywhere I looked, it was boys or men in the stories. That really put into perspective just how underrepresented women are, and it made this quest much more important in my eyes, because this quest focuses on switching the spotlight over to the female scientists, which is long overdue."

One day like my mom,
I may be busy,

But I'll always show my kids,
they're the most important to me!

# TAKE HOME IDEAS

How can you find ways to have identity, adventure, family, and social impact into your assignments?

What rules can you break in how we do assignments?

A feature of White supremacy culture in academia (Okun, 2020) is worship of the written word. How much do we have this in our assignments? How can we break that culture as the only way?