



JOHNS HOPKINS
UNIVERSITY

Building Accessible, Gamified Learning is Definitely Possible

Celine Greene, Toni Picker, & Kamran Rasul
Johns Hopkins University

By the End of This Session ...

- Learn from our story
- Reflect with us to improve
- Leave inspired



Let's Break Out the Game

- 1) Back Story
- 2) Characters
- 3) Setup
- 4) Play
- 5) Leveling Up

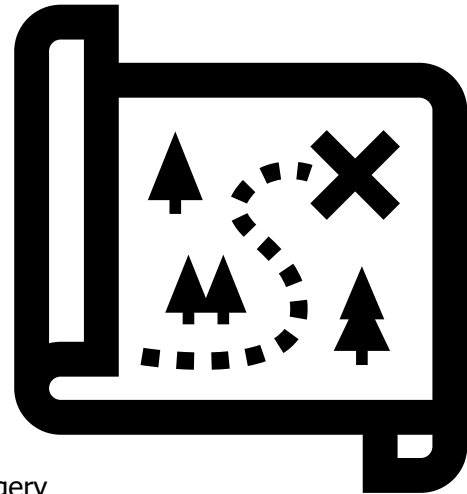
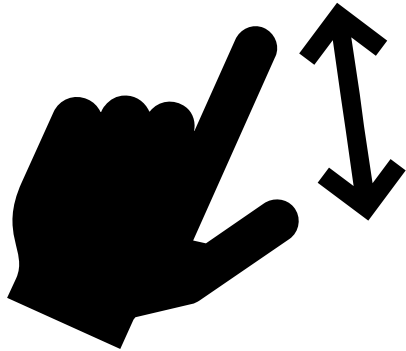


Back Story

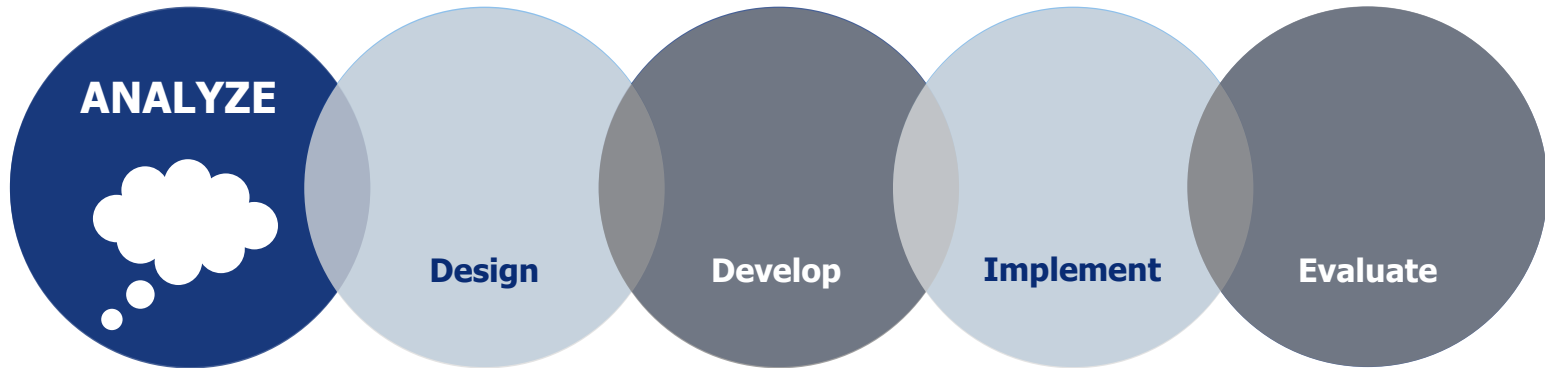


Pet Peeves

Most Gamified Educational Activities
are Not Fully Accessible



ADDIE Level 1



The Opportunity

What was asked:

- High engagement
- Time limit
- In-person (group)
- Satisfied participants

What we wanted to deliver:

- High engagement
- Flexibility
- Satisfied participants
- **Inclusive experience**

Gamified and Inclusive Experience



Gamified

- Challenging
- Competitive
- Rewarding
- Interactive
- ...

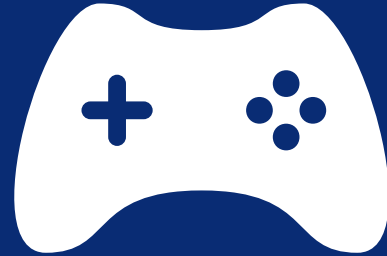
Inclusive

- Respectful
- Corrects injustice
- Embraces diversity
- Equal participation
- ...

Social Barriers in Gaming

“Games can’t be accessible to everyone, the definition of ‘game’ requires some kind of challenge, which will inevitably exclude someone. *But all games can be made more accessible to more people while maintaining what makes them what they are.* All of us have the means to open our medium up to a wider audience.”

[Emphasis added.]



Striking a Balance: What Would it Mean?



- Gamified learning
- Inclusive experience
- Efforts
- Resources
- Rewards

Characters



Protagonists



Expert #1
(Toni)

- Instructional Design
- Activity Authoring and Development
- Programming
- Digital Accessibility



Expert #2
(Celine)

- UDL Content
- Digital Accessibility
- Instructional Technology
- Instructional Design



Expert #3
(Kamran)

- Digital Accessibility
- Assistive Technologies
- Disability Support
- Testing



Support Team

- Editing
- Testing
- User experience
- Overall feedback

Character Packs

Boosts:

- Proximity
- Communication channels
- Dedication
- Skills & expertise

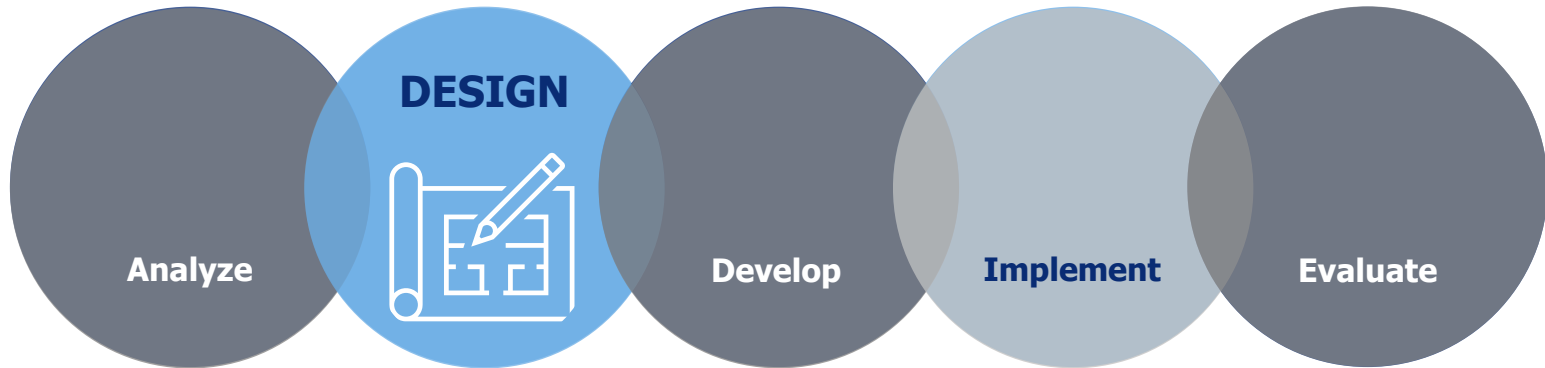
Disadvantages:

- Time
- Limited resources to share building
- Limited testing

Setup



ADDIE Level 2



Designing



Theme



Image source: Television Academy. Retrieved 15 Oct 2024 from <https://www.emmys.com/photos/300396>

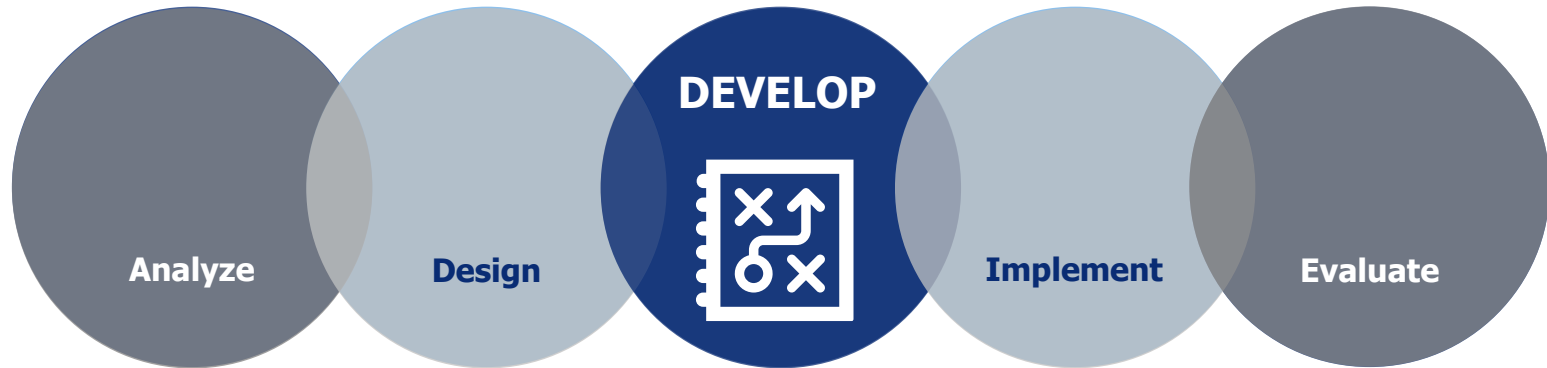
Platform



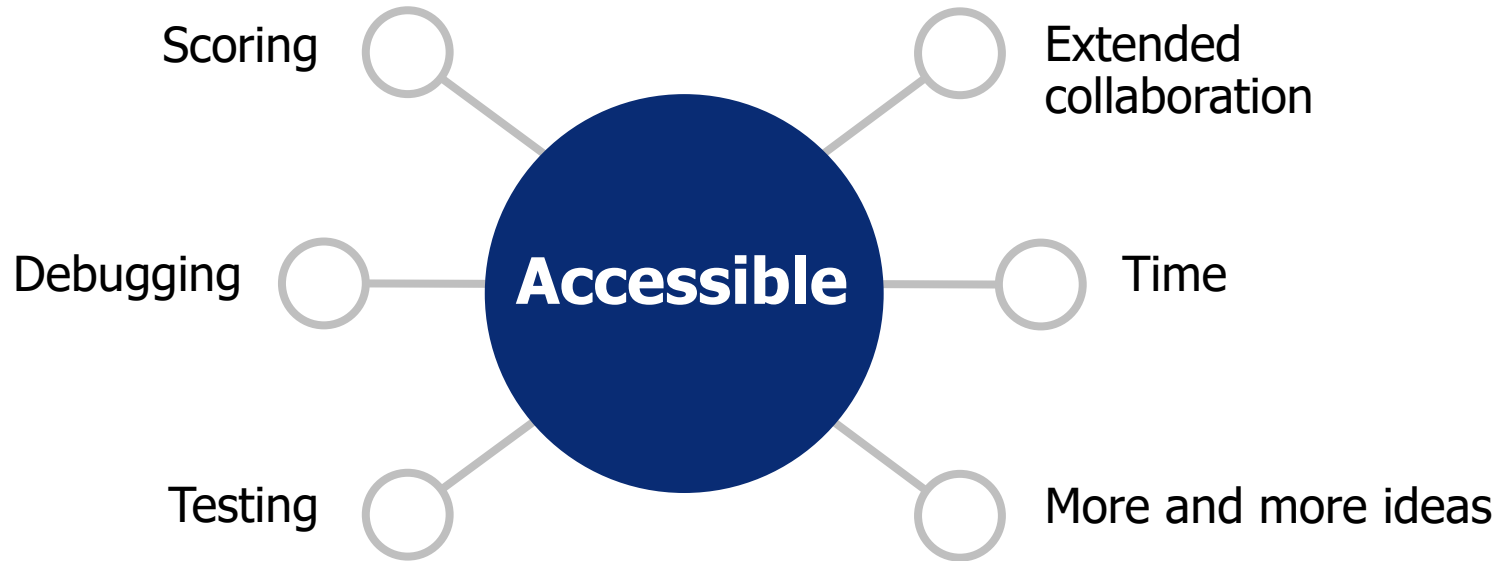
Supporting Resources



ADDIE Level 3



Developing



Implement, Test, & Improve

- Visibility (perceivable)
- Interaction (operable)
- Cognitive load (understandable)
- Platform (robust)



This could be a method for highlighting patterns, critical features, big ideas, and relationships in group discussion/projects, which is a checkpoint to provide **options for comprehension.**

What is use the jigsaw method (where every student in a group is assigned to teach the others about one topic, after they confer with other students assigned the same topic) to understand the historical context of a literary passage?

What is make use of clearly separate topic and category threads in a searchable discussion forum for ease of navigation, including less required scrolling on the LMS page?

Beyond the Game: Keeping Things Accessible

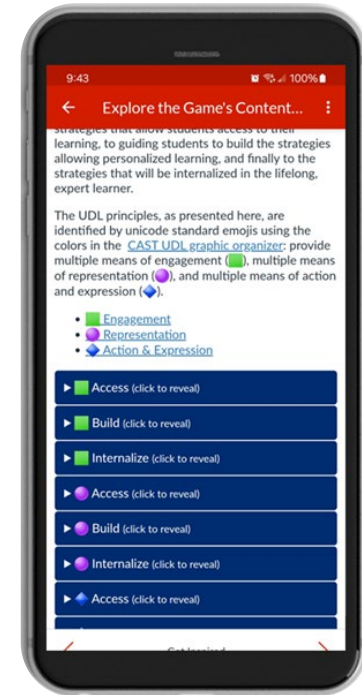
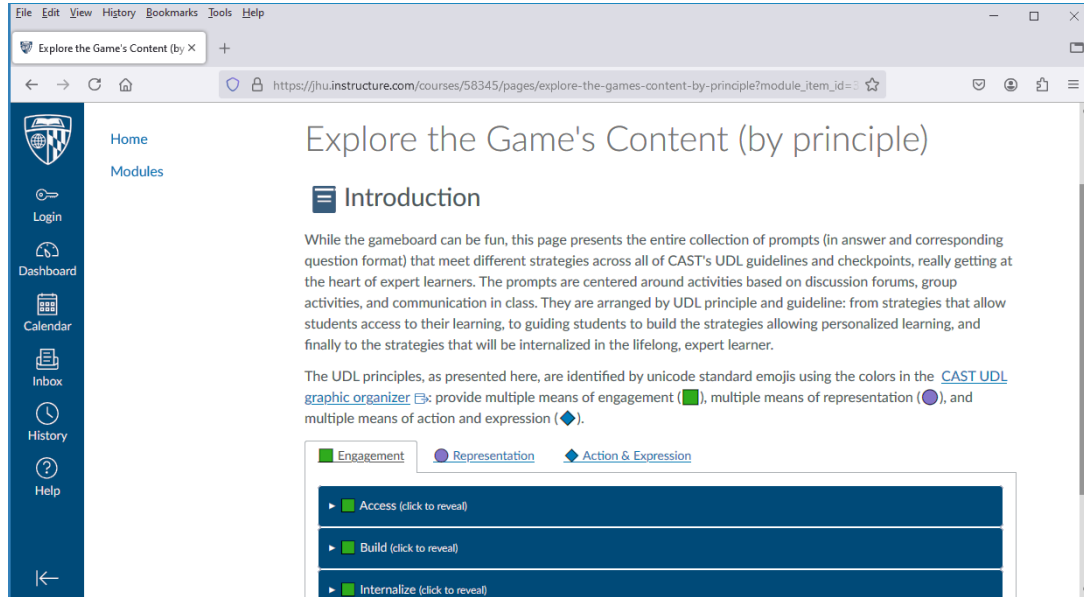
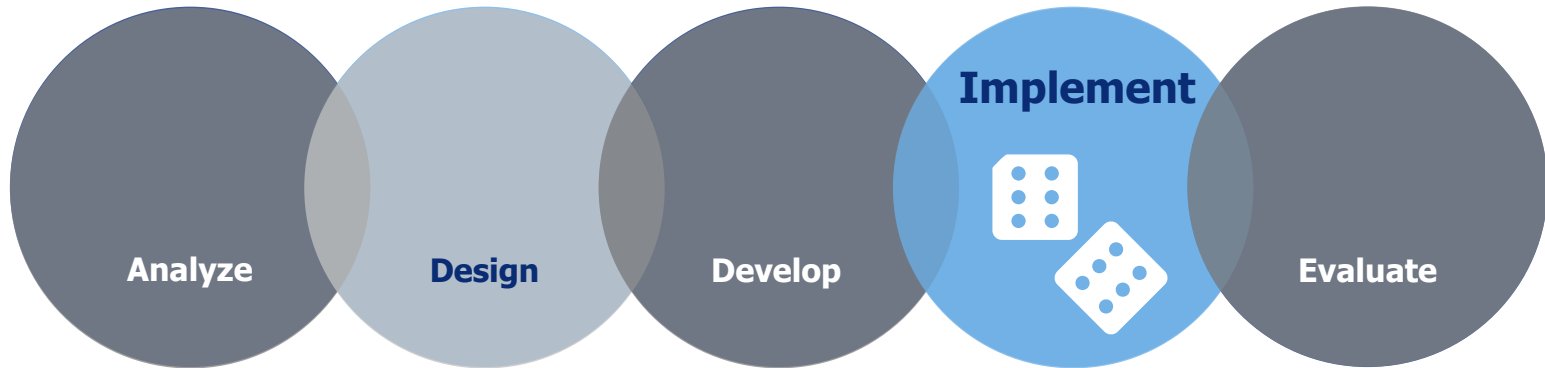


Image sources: Johns Hopkins University, CO.EN.FFA.UDL_Public Expert Learners. Retrieved 15 Oct 2024 from <https://jhu.instructure.com/courses/58345>
Microsoft Stock Imagery (mobile phone)



Play

ADDIE Level 4



Getting to the Practices: The Game

	Engagement	Representation	Action & Expression
Access	250	250	250
Build	500	500	500
Internalize	750	750	750
From the Grab Bag	1000	1000	1000

- Jeopardy style:
 - ~30 min, in-person
 - Categories based on UDL Principles and Guidelines
 - Respond to prompt in form of a question
- Encouraged during play:
 - Collaboration
 - Using CAST interactive graphic organizer (udlguidelines.cast.org)

Sample Prompt: Engagement & Access

Activities for meeting this **checkpoint** as options for **recruiting interest** might include:

- Setting expectations (rubric or otherwise) for what would be considered a “quality” post in a **discussion forum** activity
- In a physical classroom, purposefully arranging student seating in a manner that allows for (and encourages) **group discussion** without a raised volume
- Addressing students by their preferred names and pronouns in **all communications**

Options for Sample Prompt

- What is **optimize individual choice and autonomy**?
- What is **minimize threats and distractions**?
- What is **heighten the salience of goals and objectives**?

Correct Response: Engagement & Access (7.3)

- ~~• [No] What is **optimize individual choice and autonomy?** (7.1)~~
- [YES!] What is **minimize threats and distractions?** (7.3)
- ~~• [No] What is **heighten the salience of goals and objectives?** (8.4)~~

Let's Get into Teams

Team WHY



Purposeful
& Motivated

**Birthdate DAY:
1 - 10**

Team WHAT



Resourceful &
Knowledgeable

**Birthdate DAY:
11 - 20**

Team HOW



Strategic &
Goal-directed

**Birthdate DAY:
21 - 31**



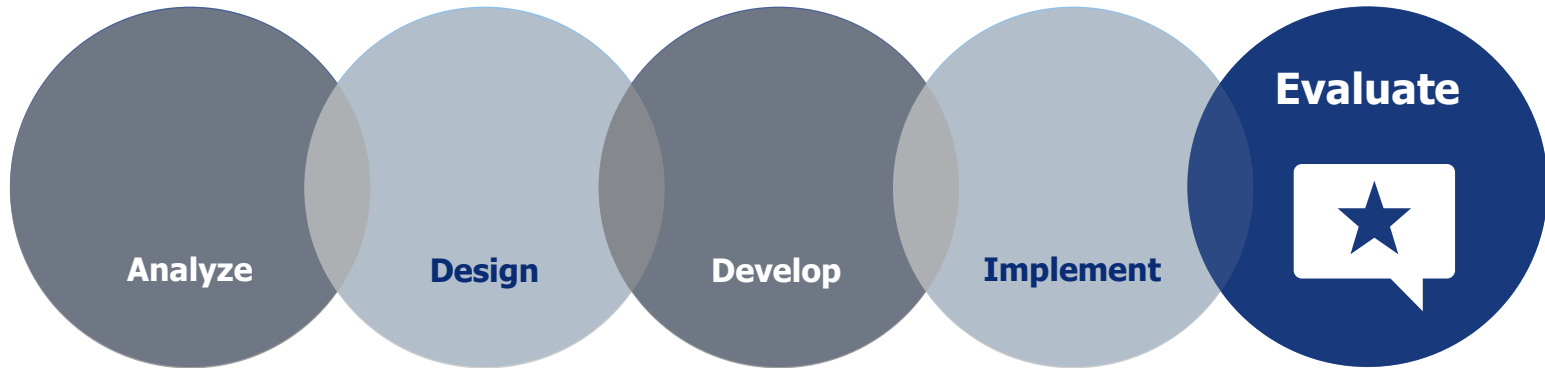
Game Launch (Canvas)

Getting to the Heart of Developing Expert Learners

Leveling Up



ADDIE Level 5



Looking Back

What made it a success:

- Collaboration in design, build, testing
- Expertise in design, build, testing
- Enthusiasm in design, play
- Adaptability afforded by modality
- Social connectivism in play
- Accessible platform & resources for participants

What we learned:

- Everything takes time
- Stick to the plan
- Know there's a tomorrow
- We could help others
- Accessibility re-testing is important: a link fixed here but now broken elsewhere.

Looking Ahead

What we know now:

- Built-in scoring
- Easier backend interface
- Deliver package for others to use with their own Q & A

What we want:

- More testing
- More iterations
- More feedback
- More scenarios (e.g. hybrid!)

Considering All This, What Else?



- Gamified learning
- Inclusive experience
- Efforts
- Resources
- Rewards



We're All Winners!

jhu.instructure.com/courses/58345



Coming Soon: The Expansion Packs

- Accessibility Jeopardy
- Inclusive Teaching Jeopardy (2025)

