

Computers for Learning

CMSC 209

Prof. Diana Franklin

Course Overview

- Learn about Learning
- Learn about Game Design
- Implement a learning application
 - Integrating what you've learned about learning
 - Designed for someone not just like you

Learning about Learning

- Readings on learning
 - Extra research papers for graduate students
- Writing reflections connecting readings to your own learning
- Discussing your reflections during class
- Engaging in some active learning activities in class

Designing a Learning App

- Textbook:
 - Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C# 3rd Edition
- Learn many dimensions of game development
- There are lots of player types, things that engage players
- **Design** for all players with no resource limits
- **Implement** only a subset of design

Implementing a Learning App

- Textbook:
 - **Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C# 3rd Edition**
- Work in groups of 2-3
- Unity – a 3-d game engine
- C# - an object-oriented language built on the C language

Implementing a Learning Application

- Design
 - Profiling your own learning
 - Identifying a user (not just like you)
 - Designing a game
- In-class Activities
 - Initial design workshop
 - Final design flash talk video
- Video demonstrating the use of your MVP app
- Paper describing the relationship between your design and the concepts learned in the readings

Structure of Class

- Asynchronous Independent Learning
- Synchronous, Collaborative Learning
- Assessment

Structure of Class

- Asynchronous Independent Learning
 - Readings, Videos, Quizzes (prior to class)
- Synchronous Learning
- Assessment

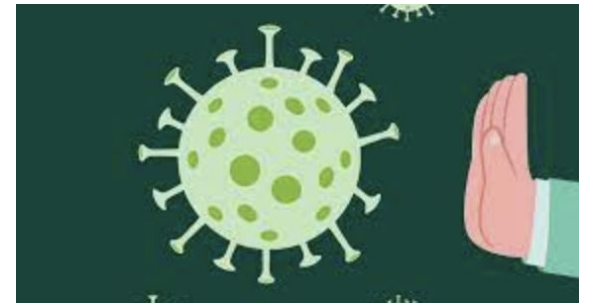
Structure of Class

- Asynchronous Independent Learning
 - Readings, Videos, Quizzes (prior to class)
- Synchronous Learning
 - Learn from Me: Ask me questions about material
 - Learn from Others: Break-out Sessions during Class
 - Learn from Activities: Engage in different types of learning
- Assessment

Structure of Class

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- Assessment
 - Programming labs
 - Written project design milestones & final design
 - Exam – ?? **Thursday, November 11th – SDS pronto!**
 - Minimum Viable Product implementation

COVID Mitigation



- You may choose whether or not you wear a mask
 - Please be respectful of students who make a different choice than you
- If you are quarantining/isolating because of COVID or have flu/cold symptoms:
 - You may stay home from class
 - Send me email to notify me
 - I will zoom the session
 - Multiple zoomers can form a breakout group

Please do not attend class with cold / flu / COVID symptoms!!

Grading

- 4 Categories:
 - Reading Questions & Participation
 - You can miss 2 each w/out penalty
 - Looking for depth of thought w/ participation
 - Midterm
 - Combo of C# + design + education
 - **SDS requests ASAP**
 - Labs
 - Final Project
 - people.cs.uchicago.edu/~dmfranklin - click on 209
 - <https://www.classes.cs.uchicago.edu/archive/2023/fall/20900-1/>

Late Policy

- 4 Categories:
 - Reading Questions & Participation
 - You cannot turn in late
 - Midterm
 - You cannot turn in late
 - Labs
 - < 24 hours, 10% off, 24-48 hours, 20% off
 - Final project milestones
 - < 24 hours, 10% off, 24-48 hours, 20% off
 - Final Project
 - You cannot turn in late

Logistical questions?!?

The Golden Rule

**The Golden Rule:
Treat others the
way YOU want to be
treated.**

Oh, I'm sorry.
I forgot I only
exist
when you need
something.

Some People Have Their Brains
Wired to Take Advantage of
Others, Study Shows



**Why Are People
So Mean?**





How
The Golden Rule
is actually really (kind of) super
WRONG
CHANGE MY MIND

Levels of The Golden Rule

TREAT OTHERS THE WAY
THEY WANT TO
BE TREATED

DO NOT TAKE
ADVANTAGE ON
OTHERS AND DO NOT
LET OTHERS TO TAKE
ADVANTAGE OF YOU
-RAMISETTY CHANDANA

The Golden Rule:
Treat others the
way YOU want to be
treated.

Why Are People
So Mean?

Levels of Educational Design

Design success for **many people** unlike you

Flexibility

Design success for someone **unlike** you

**Listening,
Empathy**

Design **success** for someone like you

**Introspection,
self awareness**

Design **fail** for someone like you

**Lack of self
awareness**

Why is sharing important?

Listening, Empathy

Flexibility

- You can learn from others' learning experiences.
- Others can learn from your learning experiences.
- Learning about what didn't work for others helps us design better.

Group up!

- Groups of 2-3
- Introduce yourself
 - Name, major, why you are taking this class
 - What is a positive educational moment in your life



What is required for sharing?



- The entire purpose of sharing is to learn from others not like you.
 - What is normal to you is not normal to others
 - Struggles, challenges are all a normal part of the learning process
- Respectful exchanges

What is a respectful exchange?

Respectful words / actions

Allowing others to speak -
don't dominate
conversation

Asking follow-up questions

Eye contact + nodding
(non-verbal agreement)

Allowing for people to not
always be ready with a
response

Disrespectful words / actions

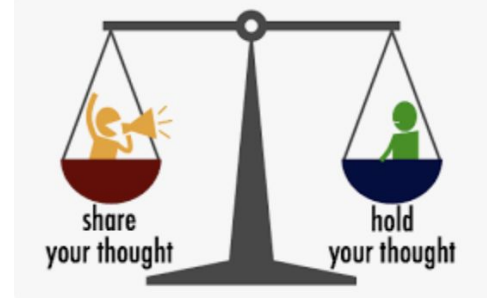
Minimizing someone's
challenges

Being dismissive of others'
questions

Disagreeing with something
subjective

Sharing what you heard to
someone outside this class

What is required for sharing?



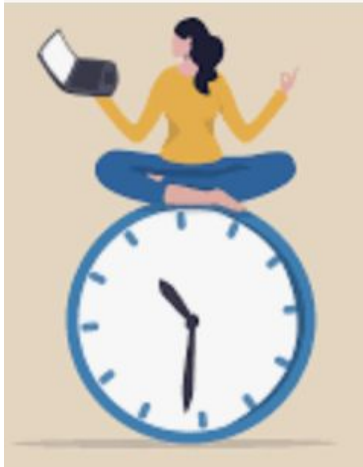
- The entire purpose of sharing is to learn from others not like you.
 - What is normal to you is not normal to others
 - Struggles, challenges are all a normal part of the learning process
- A safe space
 - Only positive responses to sharing
 - Only positive statements about others
- We must all respect, inside and outside the classroom, each other's experiences

What makes a good partner?

Helpful actions

Unhelpful actions

Being a Good Partner: Prep



On Time

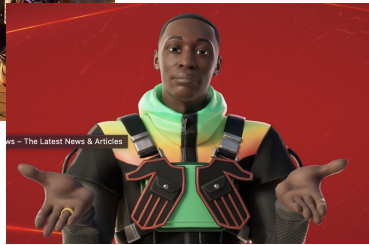


Prepared

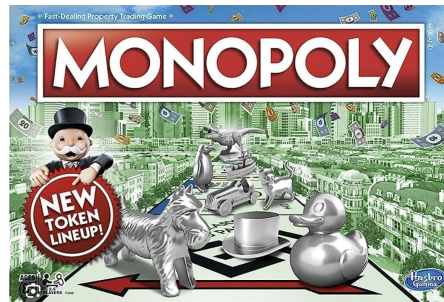
Future Prep



Play or Watch Videos
about Fortnite



Complete 10
DuoLingo lessons



Play Monopoly
online or board

Being a Good Partner: Design



Positive Mindset



Listen



**Refine, not
Reject**

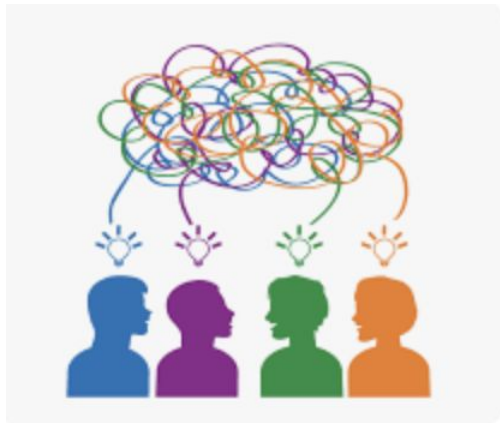


**Many users,
Many ideas**



Filter later

Being a Good Partner: Joint Work

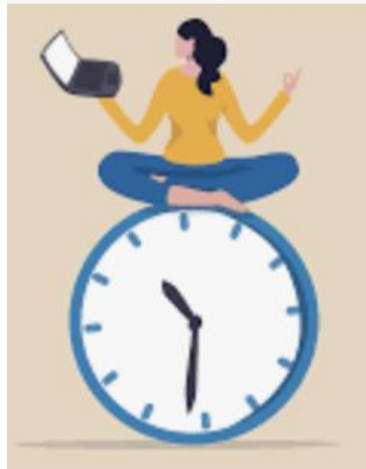


**Discuss,
not Dictate**



**Patient,
Supportive**

Being a Good Partner: Solo Work

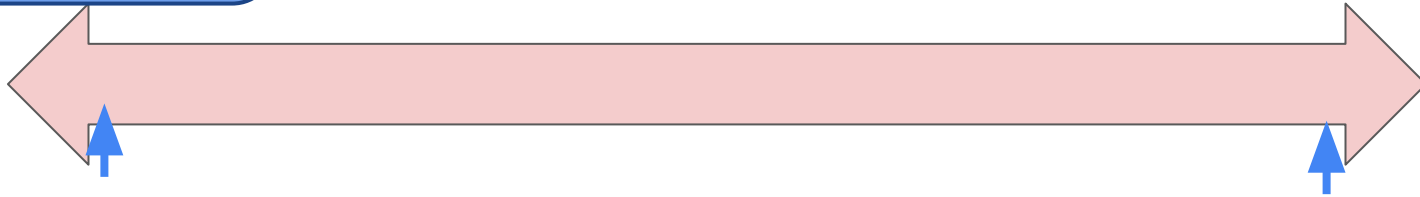
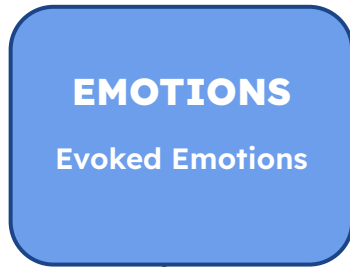


On Time



Dig for Solutions

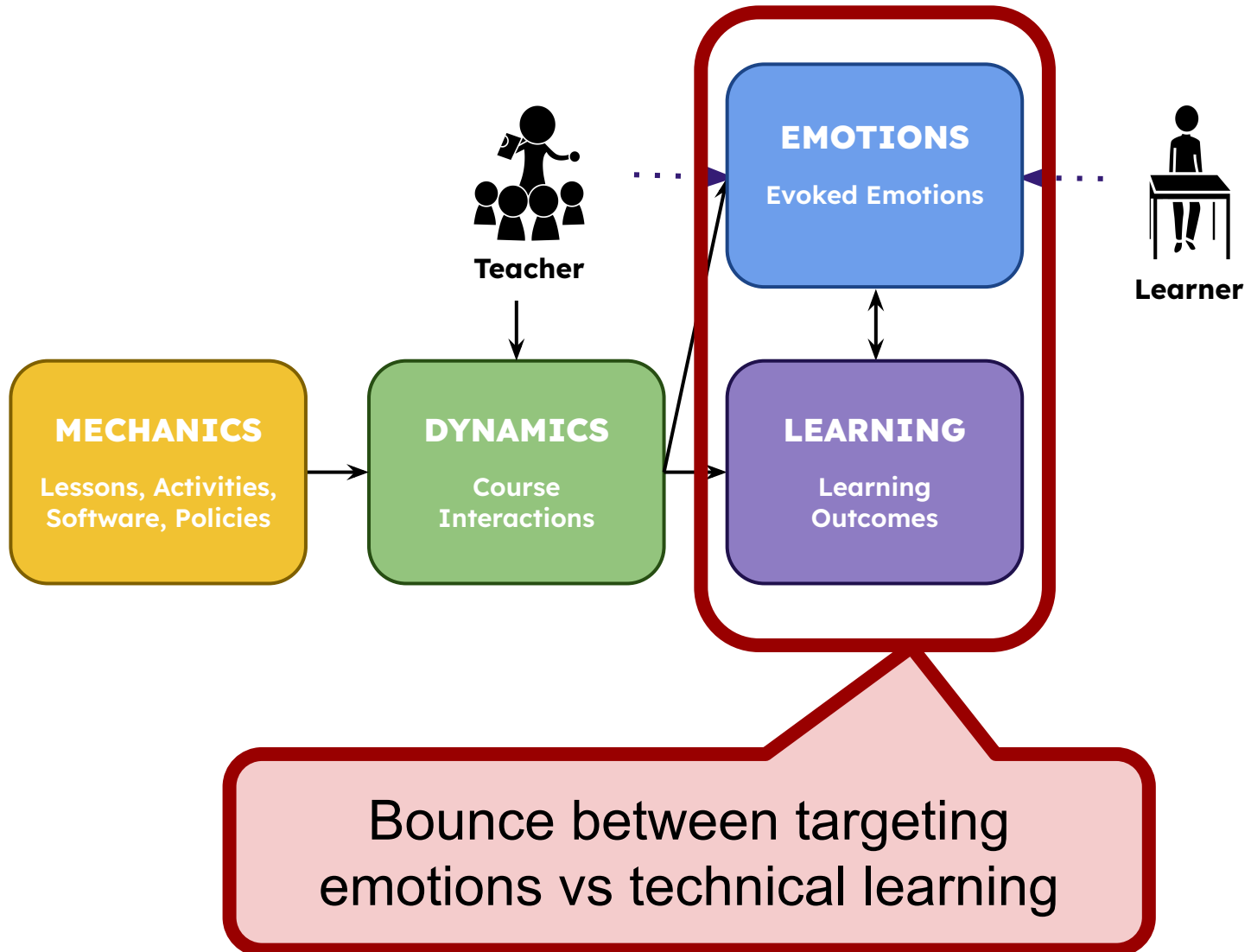
Learning / Engagement spectrum



Game: Fun, teaches
little academic content
Teaches game skills

Lecture:
Teaches academic
content,
not a game

Learning Activity Elements



Learning / Engagement spectrum

EMOTIONS
Evoked Emotions

LEARNING
Learning Outcomes



Game: Fun, teaches little academic content
Teaches game skills



Educational Game:
Feels like a game
Teaches academic content

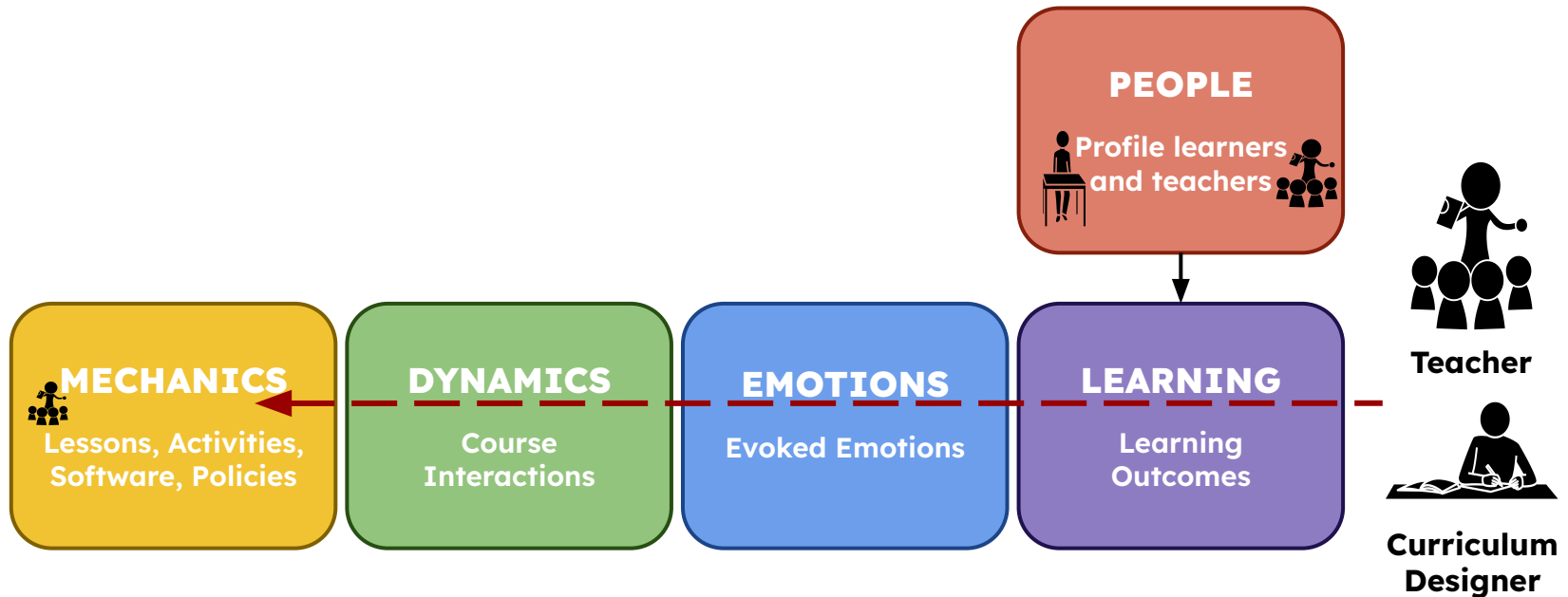


Gamification:
Teaches academic content, *employs game-like incentives*, but **not a game**



Lecture:
Teaches academic content, **not a game**

Learning Activity Design Path



You Are a Game Designer!

- As of this moment, you are a game designer...
- and I want you to say it out loud!

I am a game designer.

You Are a Game Designer!

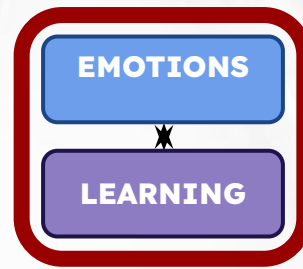
- **But, this class is actually teaching you to design more than just games**
- **The techniques you learn in this class will teach you to design *any* kind of interactive experience:**
 - **Games**
 - **Parties**
 - **Events**
 - **Learning Experiences**
- **You're more than just a game designer**

I am an experience designer.

You Are a Game Designer!

- Why am I asking you to do this?
- According to Robert Cialdini's book, *Influence: The Art of Persuasion*, people are more likely to follow through if they state out loud that they will do so
- Say it one more time:

I am a game designer.



Bartok: A Game Design Exercise

- **Bartok is a classic card game that is similar to the commercial game *Uno***
- **All you need to play are three to five players and a standard deck of playing cards**
 - **Break into groups of 3-5 players each**
 - **Remove the Jokers from the deck**
 - **Shuffle the cards**

Bartok: A Game Design Exercise

▪ Objective

- Be the first person to run out of cards

▪ Standard Rules:

- Deal 5 cards to each player
 - The remaining cards become a draw pile
- Flip over the top card of the draw pile to start a discard pile
- The person to the left of the dealer plays first, and play proceeds clockwise
- Each player must play a card onto the discard pile that matches the suit or number of the top card of the discard pile.
- If they can't, they must draw a card.

Bartok: A Game Design Exercise

- Example



The player can choose to play any one of the cards highlighted with blue borders (7C, JC, 2H, 2S).

Bartok: Asking the Right Questions

■ Analysis

- Is the game of the appropriate difficulty?
- Is the outcome of the game based more on strategy or chance?
- Does the game have meaningful, interesting decisions?
- Is the game interesting when it's not your turn?

Bartok: Modifying the Rules

- Each group should pick a number (1 – 3)
- Based on the number, add the following rule to the game:
 - **Rule 1:** If a player plays a 2, the person to her left must draw two cards instead of playing.
 - **Rule 2:** If any player has a card that matches the number and color (red or black) of the top card, she may announce "Match card!" and play it out of turn. Play then continues with the player to the left of the one who just played the out-of-turn card. This can lead to players having their turns skipped.
 - **Rule 3:** A player must announce "Last card" when she has only one card left. If someone else calls it first, she must draw two cards (bringing her total number of cards to three).

WATCH OUT FOR PLAYTESTING FLUKES

- **A strange shuffle or other external force can cause one playtest of the game to be very different from others**
- **You must playtest several times to ensure that you experience an average playtest and not a fluke**
- **However, you must also note any flukes that happen because they can also happen to players**

Bartok: Asking the Right Questions

- **How did the single rule change the game?**
- **Have the answers to your questions changed?**
 - **Is the game of the appropriate difficulty?**
 - **Is the outcome of the game based more on strategy or chance?**
 - **Does the game have meaningful, interesting decisions?**
 - **Is the game interesting when it's not your turn?**
- **Discuss the changes to these answers for each of the three rules**
- **Changing a single rule can have a drastic effect on the feel of the game!**

Bartok: Making Your Own Rules

- **Now, how do you *want* the game to feel?**
- **Try designing a rule to make the game feel more like this specific emotion**
 - **Change only one rule at a time**
 - **Test with the new rule and see how it feels**
 - You don't need to complete an entire game if the rule really doesn't feel right
 - **Work with your group to make the game your own**

Bartok: Discussion

- **What game feel was your team seeking?**
- **What rule(s) did your team create?**
- **How well did they work?**