



# DESIGN WORKSHOP GAME DESIGN

## Definitions

### WHAT MAKES IT A GAME?

- Has rules and objectives
- Is engaging and, many times, fun
- Has a defined end state
- Is a mastery-based system

### GAMES VS. GAME-BASED LEARNING VS. GAMIFICATION

<https://www.upsidelearning.com/infographics/games-vs-game-based-learning-vs-gamification/games-vs-game-based-learning-vs-gamification.png>

### LEARNING OBJECTIVES

- **Prior to starting game design, learning objectives need to be created.**
  - » What learning problems are you trying to address?
  - » What do you want students to do at the completion of the game?
  - » How will you assess students?
- **Use the Revised Bloom's Taxonomy to guide objective development.**
  - » **Remember:** Retrieval of previously learned material
  - » **Understand:** Grasp the meaning from material
  - » **Apply:** Ability to use learned material in new and concrete solutions
  - » **Analyze:** Distinguish material into components or parts
  - » **Evaluate:** Ability to judge, check, or critique the material for a given purpose
  - » **Create:** Put materials together to form a new product
- **Ask if the objectives are SMART.**
  - » **S**pecific
  - » **M**easurable
  - » **A**ttainable
  - » **R**elevant
  - » **T**ime-Based
- **Resources**
  - » <http://www.celt.iastate.edu/teaching/effective-teaching-practices/revised-blooms-taxonomy>
  - » <http://teaching.uncc.edu/learning-resources/articles-books/best-practice/goals-objectives/developing-objectives>



## Definitions (continued)

---

### INTRINSIC VS. EXTRINSIC MOTIVATION

- What is the motivation for creating and playing the game?
- **Intrinsic motivation** (internal rewards) in games is the end goal for students. They should be motivated by themselves to achieve success and the learning objective should be the driver of the motivation.
- **Extrinsic motivation** (external rewards, such as leaderboards) can motivate some but it is not enough to keep everyone interested, and replay value can be low.

---

### COMPETITION

- Reveals the competitive nature of students. Can lead students to completing the game and leads to a different level of knowledge retention.

---

## Types of Games

---

### RESOURCES

[https://en.wikipedia.org/wiki/List\\_of\\_video\\_game\\_genres](https://en.wikipedia.org/wiki/List_of_video_game_genres)

---

## Game Dynamics

- Territory acquisition – Risk; Monopoly
- Prediction – Rock, Paper, Scissor
- Spatial reasoning – Tetris; Tic Tac Toe
- Survival – Fallout Shelter
- Destruction – Car Wars, Plaque & Pestilence
- Building – Sim City; Settlers of Catan
- Collection – Candy Crush; collectible card games
- Chasing/Evading – Pac-Man; Scotland Yard
- Trading – Pit; Pokemon
- Race to the end – Temple Run



## Game Design: Low Tech

1. Find a target audience.
  - a. Determine your audience, including what motivates them to play.
  - b. The target audience can help guide your storyline in the game as story impacts the motivation of the player. Without the story, players may be left questioning or guessing gameplay.
2. Find a good game mechanic.
  - a. **Mechanic** - what you are doing when actually playing the game. Start simple and develop more complex mechanics as game progresses.
  - b. Examples: Any movement (e.g. jumping), pressing, swiping, rolling the dice, etc.
  - c. Puzzle games are a style of game with no replayability; blockers prevent you from moving forward and playing. Don't use puzzles to prevent process. Puzzle game should be the object of the game design, not a hindrance to gameplay. It will become frustrating if you continue to block player progress. (We do this in education (i.e.  $1+1=2$  then continue.)
3. Don't want learning to be a chance game, it is better to have a skill game with some random elements.
  - a. Gambling is a game of chance, not a game of skill. The odds are always the same (there is no predictability). When rolling a die, the chances are always one in six.
  - b. We don't learn in a game of chance; we learn by mastering a topic. This is not to say that games cannot have some random elements included.
4. The more restrictions there are, the more creative people will be when designing a game.
5. Make the item/reward of value (i.e. double the value of your points as demonstrated in the scavenger hunt. There were no road blocks, like puzzles that stopped us from learning, instead we were given value that encouraged us to search for our learning. Goal was to get us into the library.)
6. Cheating is important and can be encouraged! Don't make it obvious, like having the answer hidden in a book, website, etc. This element can be powerful within the learning process.
7. A Meta-Game is a smaller game inside of a larger game. The larger game is the main goal; however, the smaller games help to accomplish the overall game mission.
8. Be careful about the prize/reward. Prizes and rewards can be valuable and good, but they change the perspective. Prizes need to be valuable, but not overly valuable. If they are too valuable, they will cause the losers to be discouraged and not focus on the learning objective as much as they could.
9. Be aware of a leaderboard. Create a leaderboard where everyone can get to the top because, if they believe they can't win, they will quit. Be aware of the impact to motivation the leaderboard can have, ask if this is truly the direction you are leading the students and learning process.
10. Restrict the time to play the game. Time can be used to enhance and engage students to speed up. Students will become more competitive when they have time restrictions.
11. Create diverse teams of students for game design and gameplay. Make sure teams are balanced from a gender perspective; two 'alpha' males or females should not be on the same team either. It is okay to mix up teams to keep things interesting. In addition, mixing up teams can avoid the problem of cliques.
12. Don't allow students to get married to their initial concept for the game; the process is about iterative design and the game will morph over time. One approach: start the design process with one team then hand it to a new team to make changes and suggest improvements.
13. Problem-based games are either static (basic) or they are dynamic (divergent).



## Reading List/Suggestions

Boller, Sharon; Kapp, Karl. *Play to Learn: Everything You Need to Know About Designing Effective Learning Games*. ATD, 2017.

Farber, Matthew. *Game-Based Learning in Action: How an Expert Affinity Group Teaches With Games (New Literacies and Digital Epistemologies)*. Peter Lang, 2018.

Fullerton, Tracy. *Game Design Workshop: A Playcentric Approach to Creating Innovative Games, Third Edition*. CRC Press, 2014.

Gee, James Paul. *What Video Games Have to Teach Us About Learning and Literacy*. St. Martin's Griffin, 2007.

Koster, Raph. *Theory of Fun for Game Design*. O'Reilly Media, 2013.

McGonigal. *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. Penguin Books, 2011.

Schell, Jesse. *The Art of Game Design: A Book of Lenses, Second Edition*. CRC Press, 2014.

Sheldon, Lee. *The Multiplayer Classroom: Designing Coursework as a Game*. Cengage Learning, 2011.

Tebinkas, Katie Salen. *Rules of Play: Game Design Fundamentals*. MIT Press, 2003.

---

## Contact

---

### TWITTER

@athomas\_tr  
@Triseum

---

### WEB

[www.triseum.com](http://www.triseum.com)

---

### FACEBOOK

<https://www.facebook.com/triseum>

---

### EMAIL

[athomas@triseum.com](mailto:athomas@triseum.com)

