






Using Games in Education: A Pragmatic Approach

Ruben R. Puentedura, Ph.D.

Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years
				

Formal Definition of **Play** (Salen & Zimmerman)

“Play is free movement within a more rigid structure.”

Formal Definition of **Game** (Salen & Zimmerman)

“A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”

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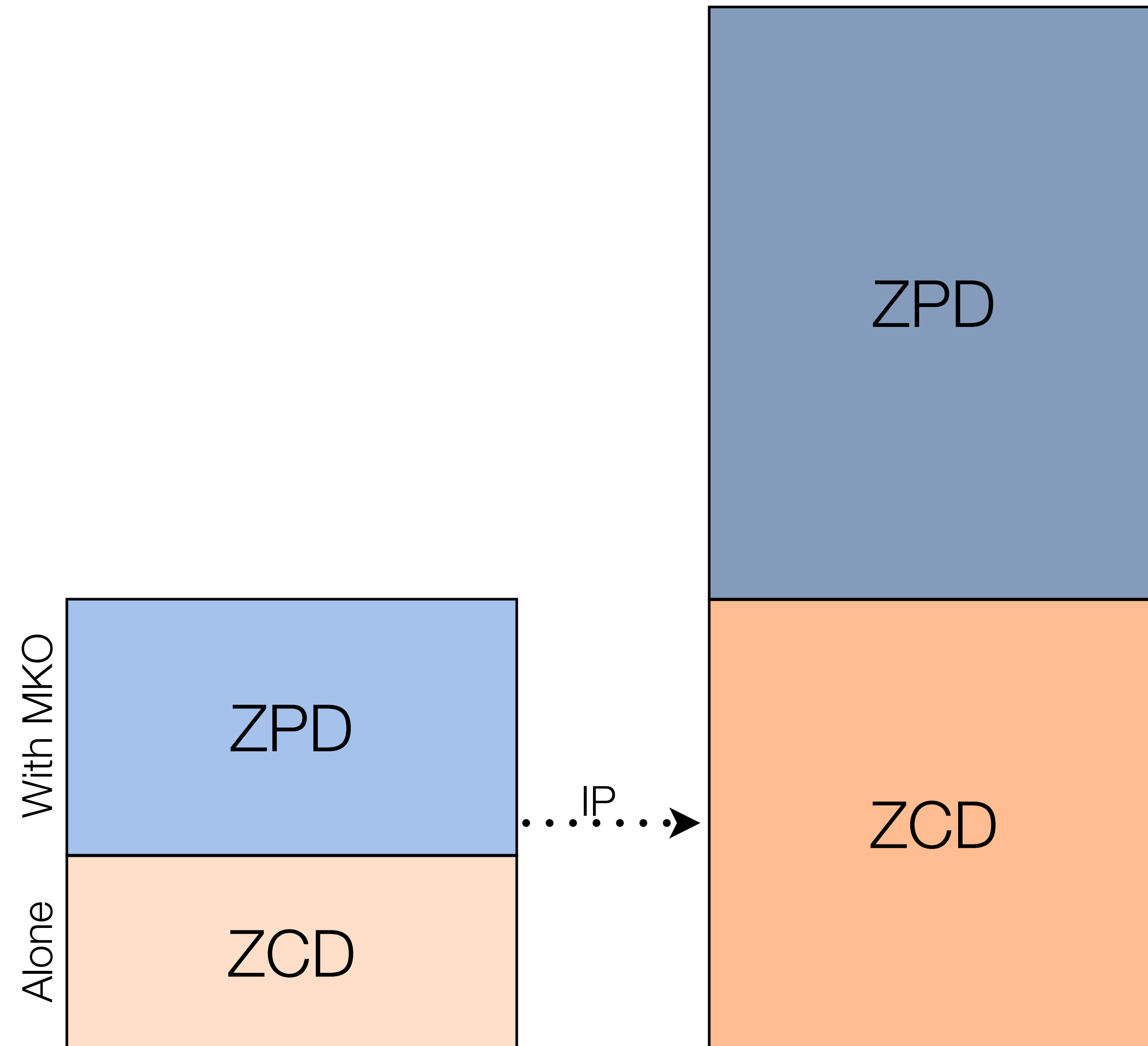
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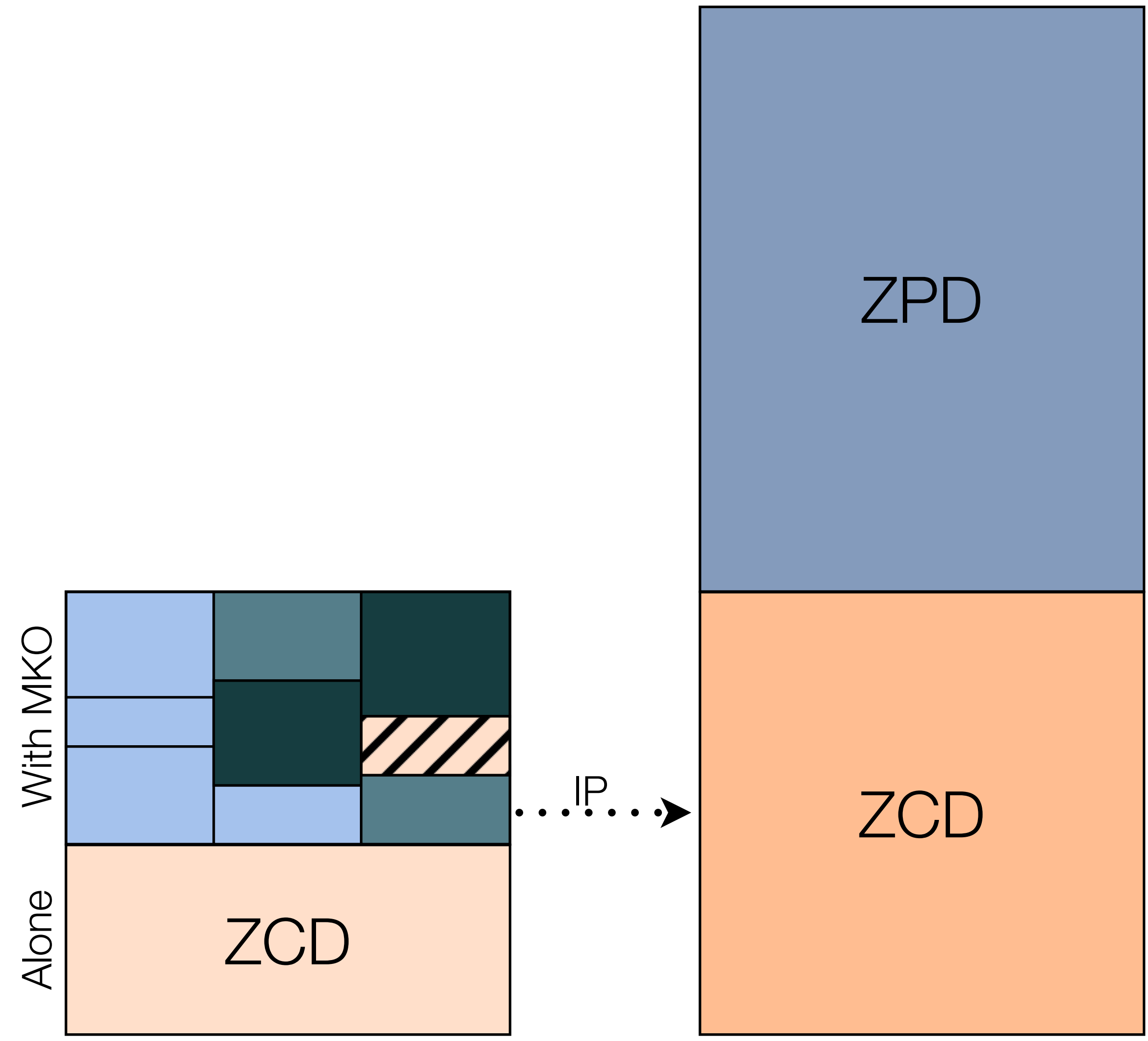
Formal Definition of **Game** (Salen & Zimmerman)

“A game is a system in which players engage in an artificial conflict, defined by rules, that **results in a quantifiable outcome.**”

Working Definition of **Sandbox** (Puentedura)

“A sandbox is the result of relaxing one or more of the definitional aspects of a game.”






The EdTech Quintet – Associated Practices

Social	Communication, Collaboration, Sharing
Mobility	Anytime, Anyplace Learning and Creation
Visualization	Making Abstract Concepts Tangible
Storytelling	Knowledge Integration and Transmission
Gaming	Feedback Loops and Formative Assessment

The EdTech Quintet – Associated Practices


Social	Provides diversity to the ZPD
Mobility	Creates the context for the process
Visualization	Aids in segmenting ZPD, bridging gaps
Storytelling	Aids in the integration of the ZPD
Gaming	Provides frameworks for independent practice

Clade X



CLADE X

A PANDEMIC EXERCISE

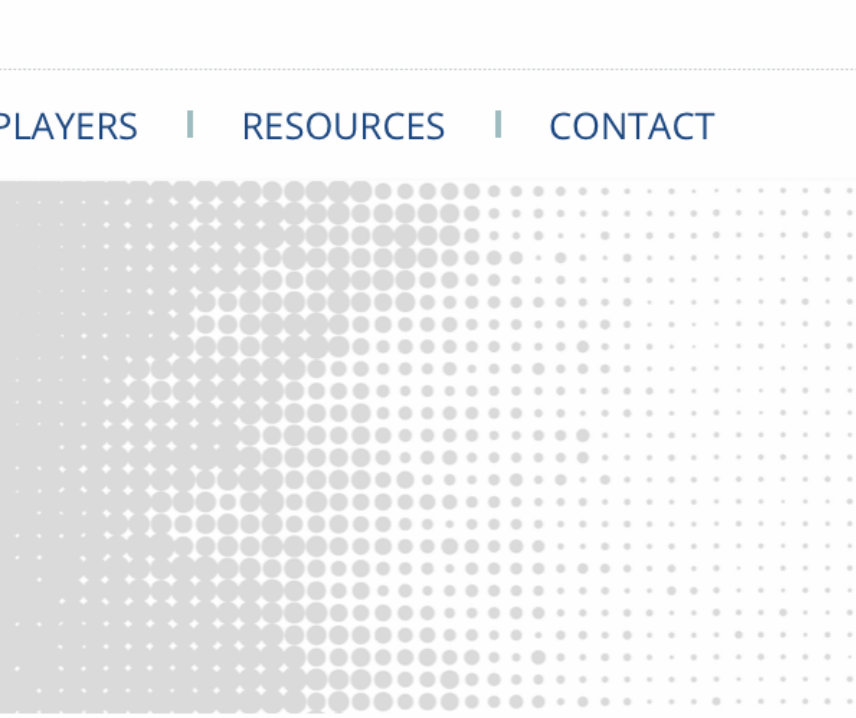


JOHNS HOPKINS



BLOOMBERG SCHOOL
of PUBLIC HEALTH

Center for Health Security

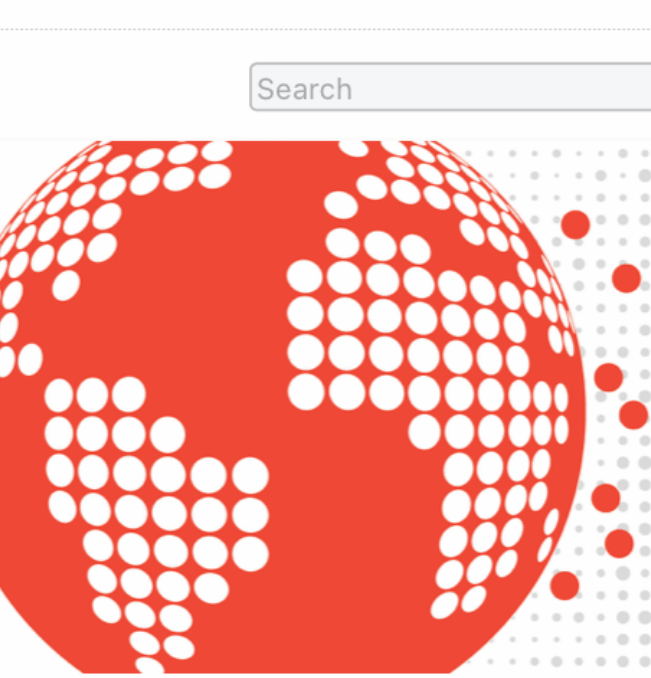
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CLADE X EXERCISE



Media

Center News

May 15, 2018

Apr. 16, 2018

Nov. 16, 2017

Media Coverage

#CladeX


Livestream (archived)

Photos


The Johns Hopkins Center for Health Security hosted the Clade X pandemic tabletop exercise on May 15, 2018, in Washington, DC. The purpose of the exercise was to illustrate high-level strategic decisions and policies that the United States and the world will need to pursue in order to prevent a pandemic or diminish its consequences should prevention fail.

Reacting to the Past


[< Barnard.edu](#)



Reacting to the Past
BARNARD COLLEGE




EventsGamesResourcesMediaReacting Consortium



BROWSE OUR GAMES


Reacting to the Past offers over 20 published titles, as well as dozens of games in development.



ATTEND AN EVENT

Learn about Reacting and connect with colleagues at our conferences and events. The best way to understand the pedagogy is by experiencing it!

Registration is now open for the 2021 **Summer of Reacting!** [Click here](#) for more details about the event.



BECOME A MEMBER

Join this community committed to promoting imagination, inquiry, and engagement in teaching and learning. Membership benefits include access to game materials, conference discounts, and more.

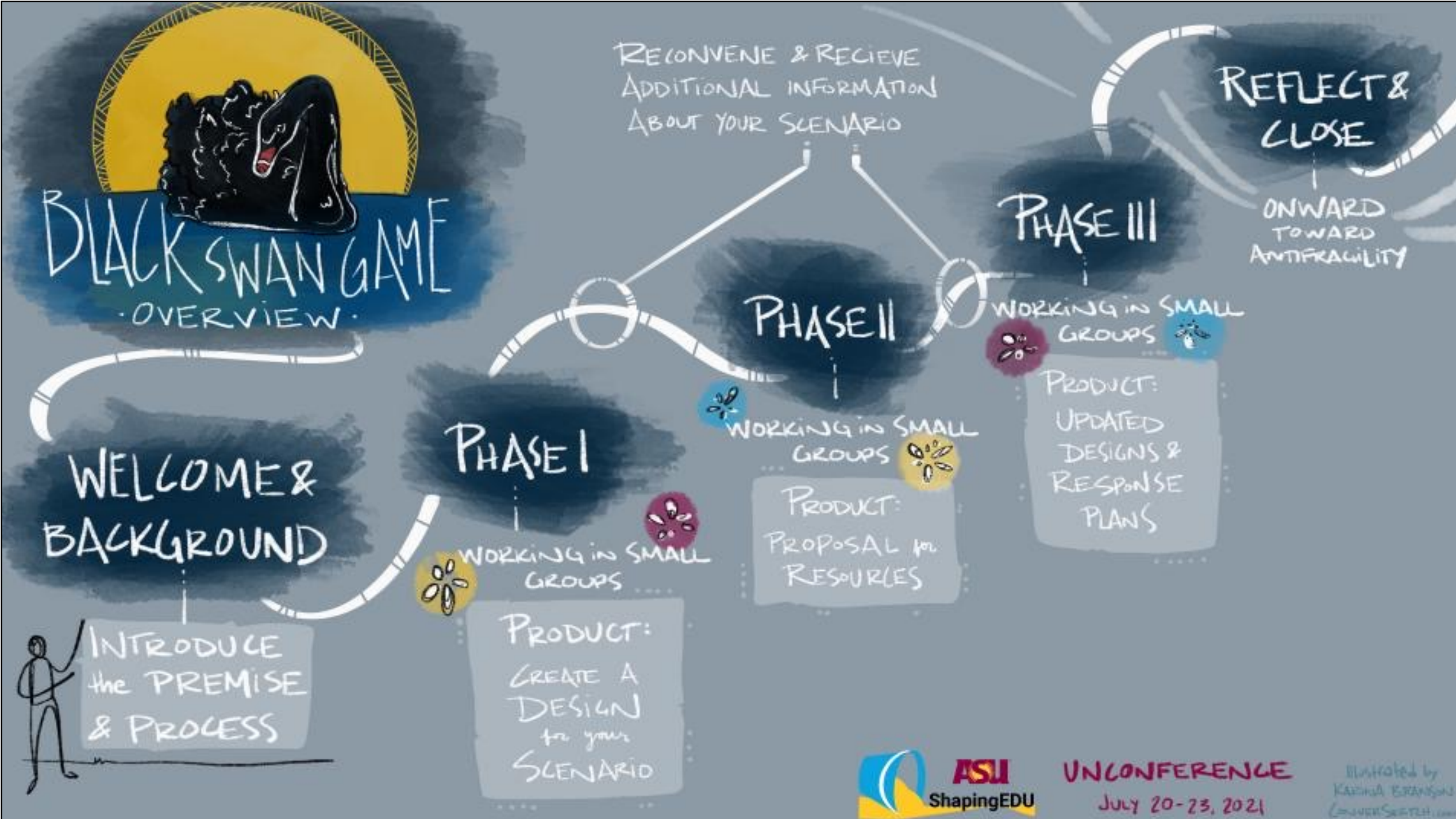
The Alternative Universities Game - COVID-19 Edition

- **The components:**

- 10 cards, each describing the key features of an “alternative university” from David Staley's *Alternative Universities: Speculative Design for Innovation in Higher Education*

- **The Rules:**

1. Up to 5 teams can play the game.
2. Each team draws two cards at random from the deck.
3. After studying the cards, the team will choose to keep one as the basis for their university design, and return the other.
4. The cards returned are shuffled, and each team draws a card - they will have to pick one of the two characteristics listed on the card to add to their design.
5. The design that each team creates will have to be robust or antifragile against a sudden unexpected pandemic, i.e. it will have to retain its fundamental character in the face of quarantine, travel restrictions, etc.
6. An unannounced Black Swan will fly in halfway through the design period, and need to be addressed by the design team.
7. At the end of the design period, each team will have 3 minutes to present the key features of their design, including its robustness/antifragility features.
8. Participants will vote on the design that they believe has best met the challenge, thus determining the winner(s).



Narrative

IF

Graphic Adv.

Action/Adv.

RPGs

MMOGs

ARGs



Shmups

Platformers

FPS

Fighting

Sports

Vehicle

Rhythm

Action

Other

Board

Traditional

Puzzle

Simulation

Sims

RTS

Mil. TBS Mid. TBS

Narrative

Other

Simulation

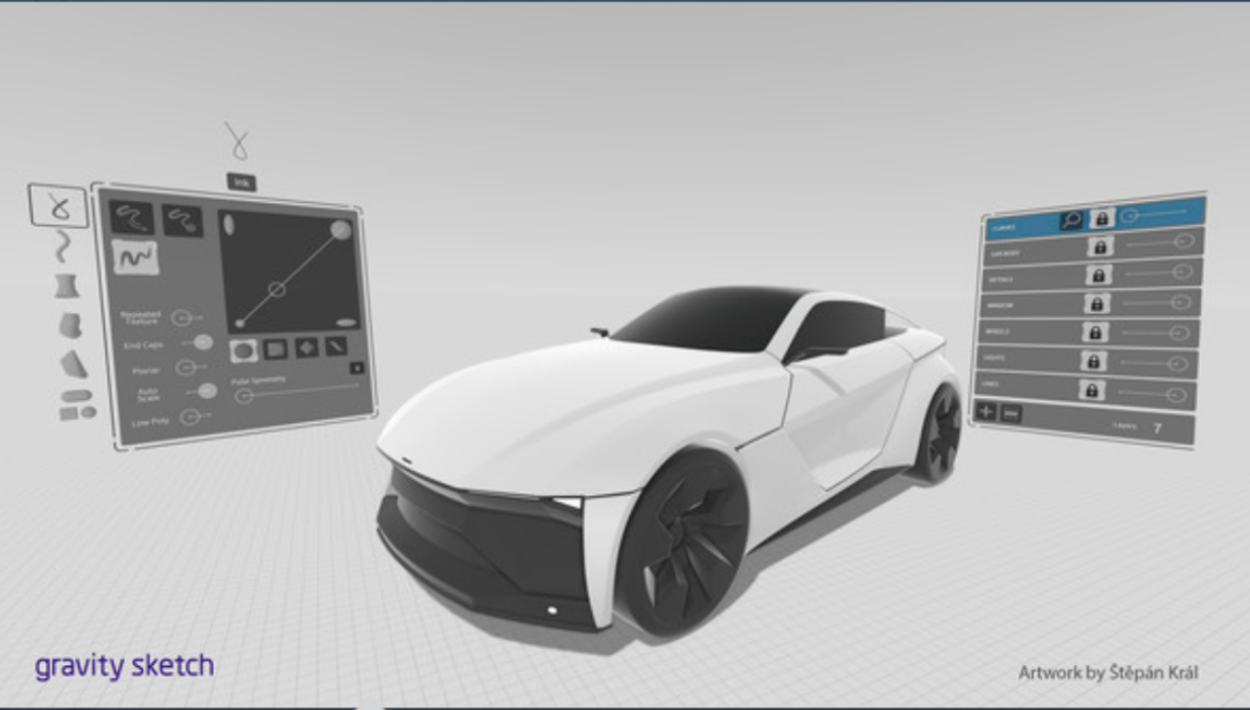
Action

Exploring VR

All Software > Animation & Modeling > Gravity Sketch

Gravity Sketch

Community Hub



gravity sketch

Artwork by Stépán Král

Think in 3D. Create in 3D. Preserve your design intent through the creative process! Create and communicate your ideas in 3D at each stage of your creative workflow, capture work as an image or model to use in other phases of your workflow.

ALL REVIEWS: **Mostly Positive** (181)

RELEASE DATE: Aug 15, 2017

DEVELOPER: Gravity Sketch Limited

PUBLISHER: Gravity Sketch Limited


Popular user-defined tags for this product:

Design & Illustration Animation & Modeling VR +

All Games > Indie Games > SculptVR

SculptrVR

Community Hub



SculptrVR

SculptrVR's 10,000x zoom enables massive creations with tiny details. SculptrVR makes it easy to create, explore, and share incredible sculptures with friends. With SculptrVR's intuitive tools, but powerful tools, you can make anything!

ALL REVIEWS: **Very Positive** (66)

RELEASE DATE: Apr 4, 2016

DEVELOPER: Nathan Rowe

PUBLISHER: SculptrVR


Popular user-defined tags for this product:

Indie VR Multiplayer +

All Games > Adventure Games > Moss

Moss

Community Hub



Moss

Moss™ is an action-adventure puzzle game from Polyarc tailor-made for the VR platform. It combines classic components of a great game—compelling characters, gripping combat, and captivating world exploration—with the exciting opportunities of VR. Now bundle with the soundtrack.

RECENT REVIEWS: **Very Positive** (27)

ALL REVIEWS: **Very Positive** (1,960)

RELEASE DATE: Feb 27, 2018

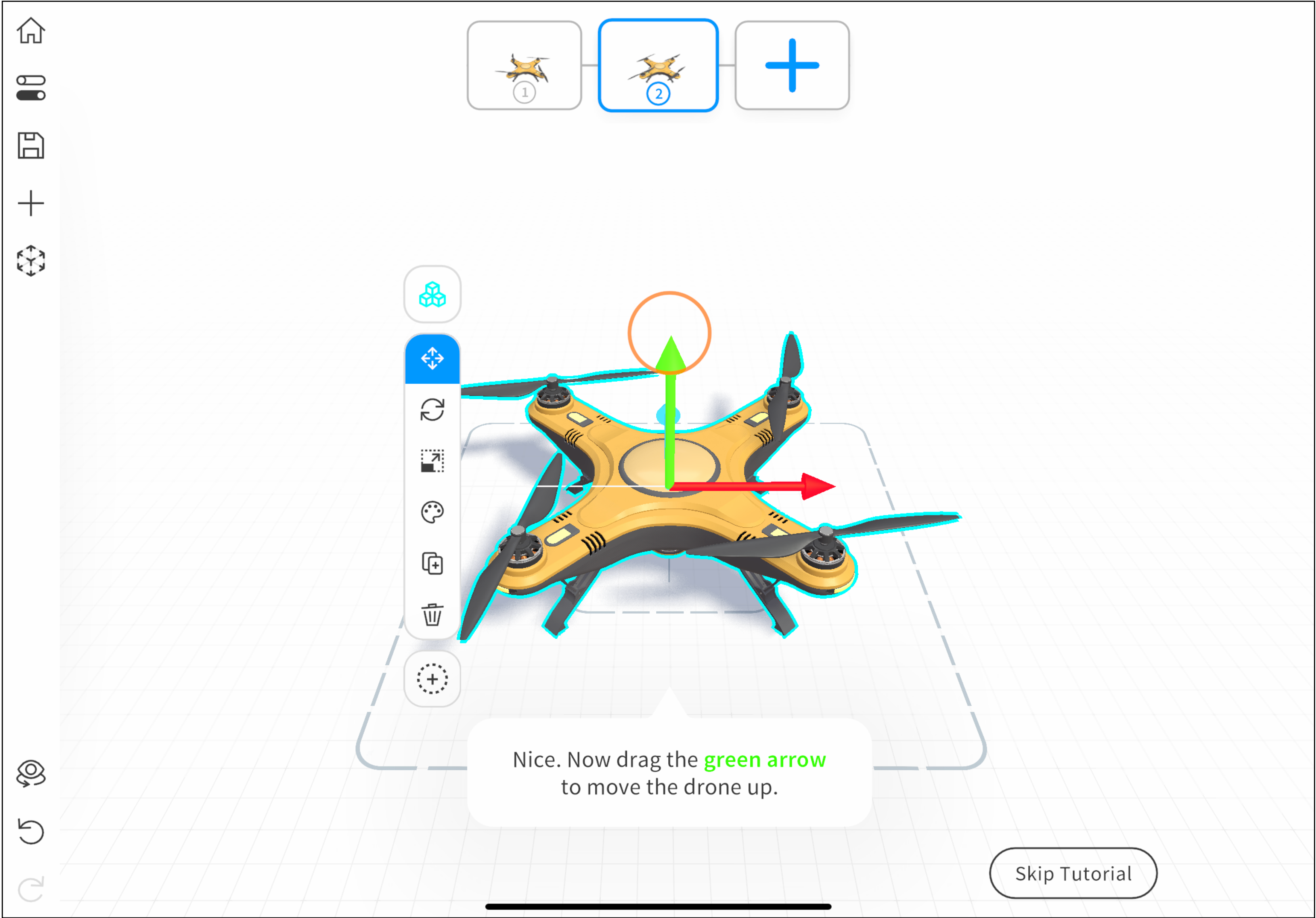
DEVELOPER: Polyarc

PUBLISHER: Polyarc

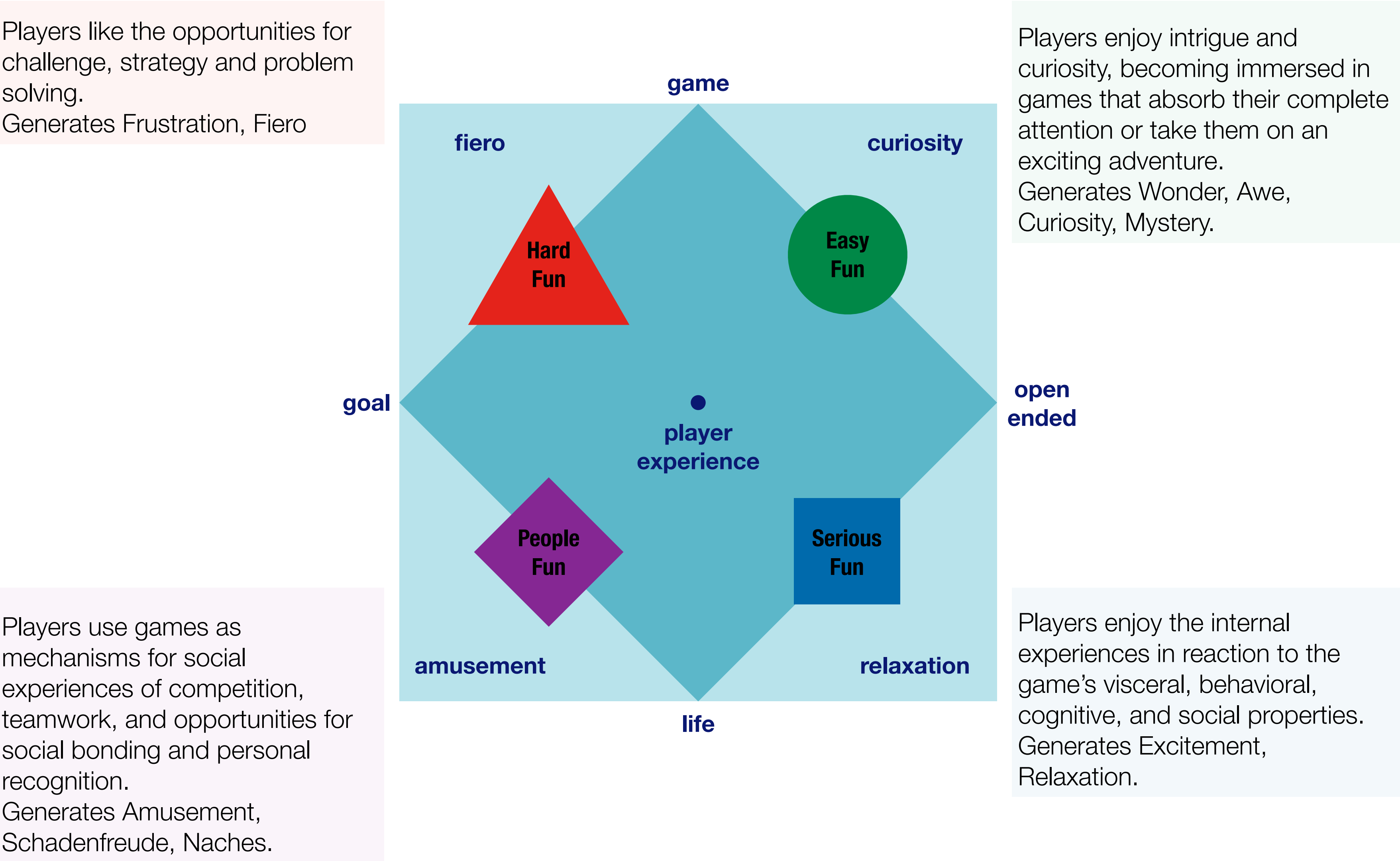
Popular user-defined tags for this product:

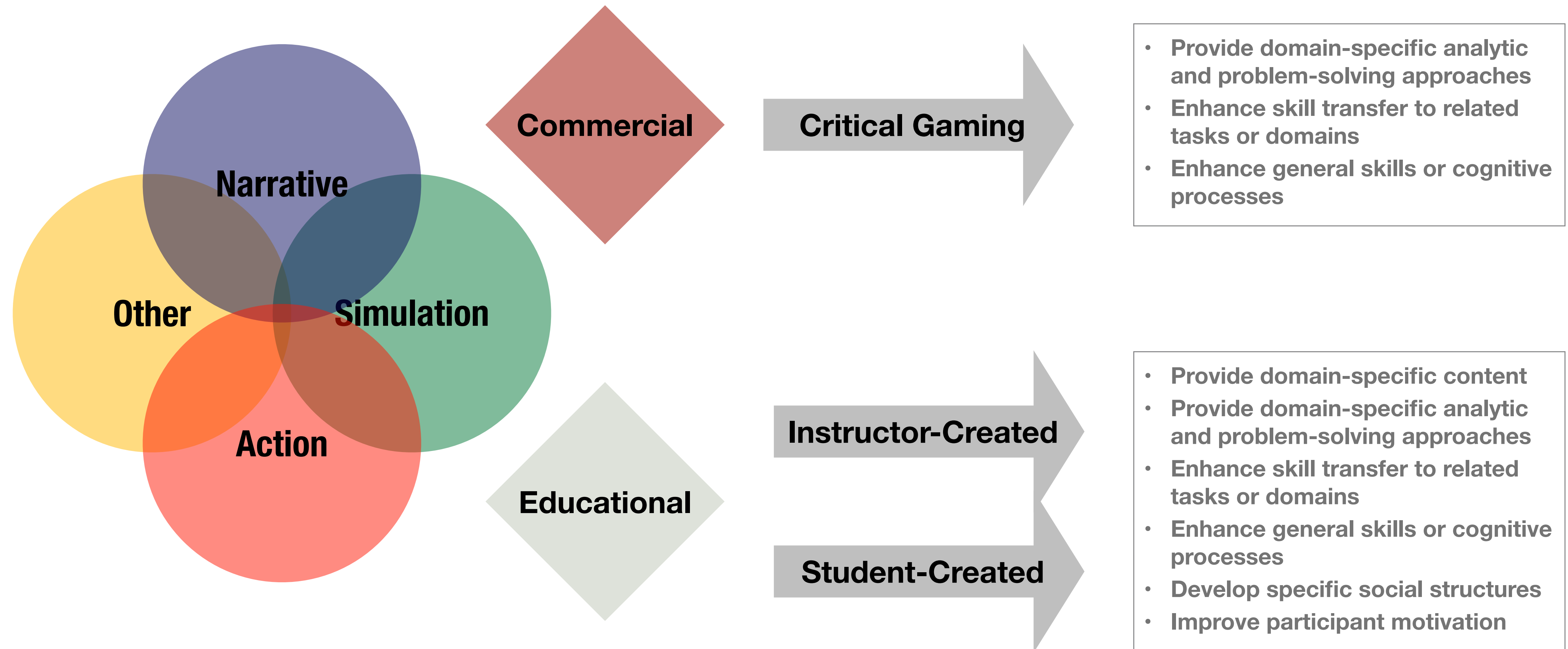
Adventure Casual VR Action Platformer +

JigSpace



Four Keys to Emotion in Games (Lazzaro)





The Community: BoardGameGeek

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Join (it's free!)

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How to Cut Your Games Down to Size


by W Eric Martin • BoardGameGeek News





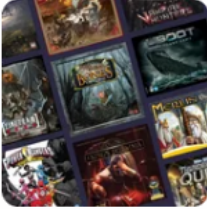
Michael Menzel on the Making of The Adventures of Robin Hood

by Michael Menzel • BoardGameGeek News




BoardGameGeek 2021 Secret Santa - Registration closes November 6

by Octavian • News



BGG.CON 2021 Charity Auction

by DFW_Nerd_Night




Undaunted: Normandy w/ David Thompson Cardboard Creations w/ Candice Harris


by heccubus


THE HOTNESS


The top 50 trending games today.

SEE ALL >









Game Design - *8-Minute Empire*



Cooperative Gaming




Chris Engle - Matrix Games

- **Matrix Game Rules:**
 - Start with a problem.
 - Say what happens next.
 - There is no order of play.
 - Anyone can add to or alter what happens.
 - All players may ask a player to roll if they don't like what they said:
 - Roll 2d6:
 - 7+ – *The action happens and cannot be altered.*
 - 6- – *It does not happen and cannot happen in the game.*
 - The game ends when the problem is solved.

Matrix Games – Some Details

- For games to work, Matrix Games need a scenario. This is the “Matrix” of Matrix Games. A scenario lays out a matrix of information about the game world which key the players in on what they are to do. It may include maps, lists of characters, a central problem to be solved, lists of ideas and much more. The scenario doesn't say everything that can happen but gives a flavor of what might happen. The player's minds fill in the blanks to form a complete picture.
- One common form is for players to make arguments for what happens next. They say an action, a result from the action, and three reasons why it happens. A referee decides what they need to roll to succeed and other players may make counter-arguments for what they think happens instead. Players then roll to see which happens.


Twine – <https://twinery.org>

 Twine is an open-source tool for telling interactive, nonlinear stories.

You don't need to write any code to create a simple story with Twine, but you can extend your stories with variables, conditional logic, images, CSS, and JavaScript when you're ready.


Twine publishes directly to HTML, so you can post your work nearly anywhere. Anything you create with it is completely free to use any way you like, including for commercial purposes.


Twine was originally created by [Chris Klimas](#) in 2009 and is now maintained by a whole bunch of people at [several different repositories](#).


 [Download 2.3.15](#)
For **Windows**, **macOS**, and **Linux (32-bit)**


[Use it online](#)

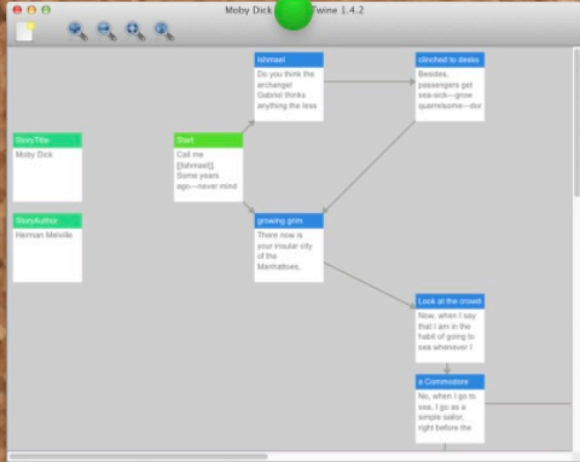
Version 1.4.2 for **Windows** and **OS X** is also available.

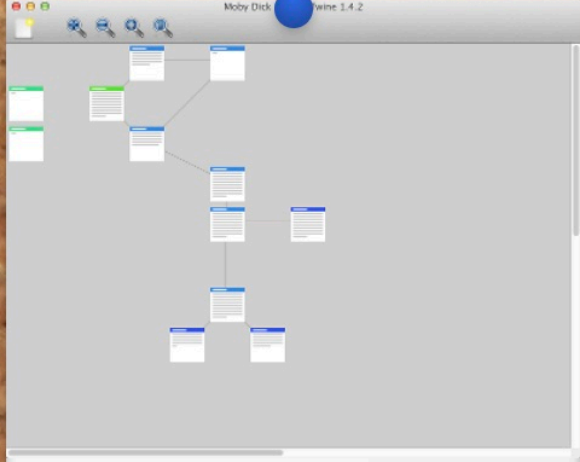
 Do you love Twine?
[Help support its development!](#)

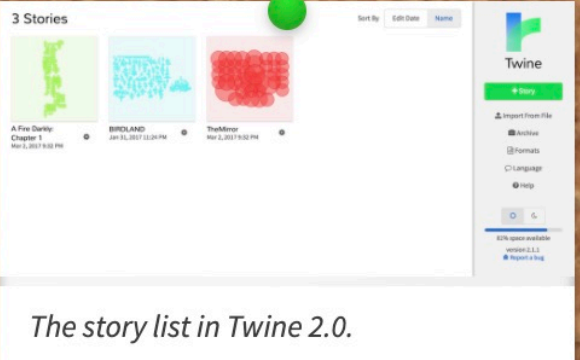
 [Cookbook](#)
Reference documentation and examples of common authoring tasks


 [Discuss](#)
on the Interactive Fiction Community Forum

 [Discord](#)
live chat with other people using Twine

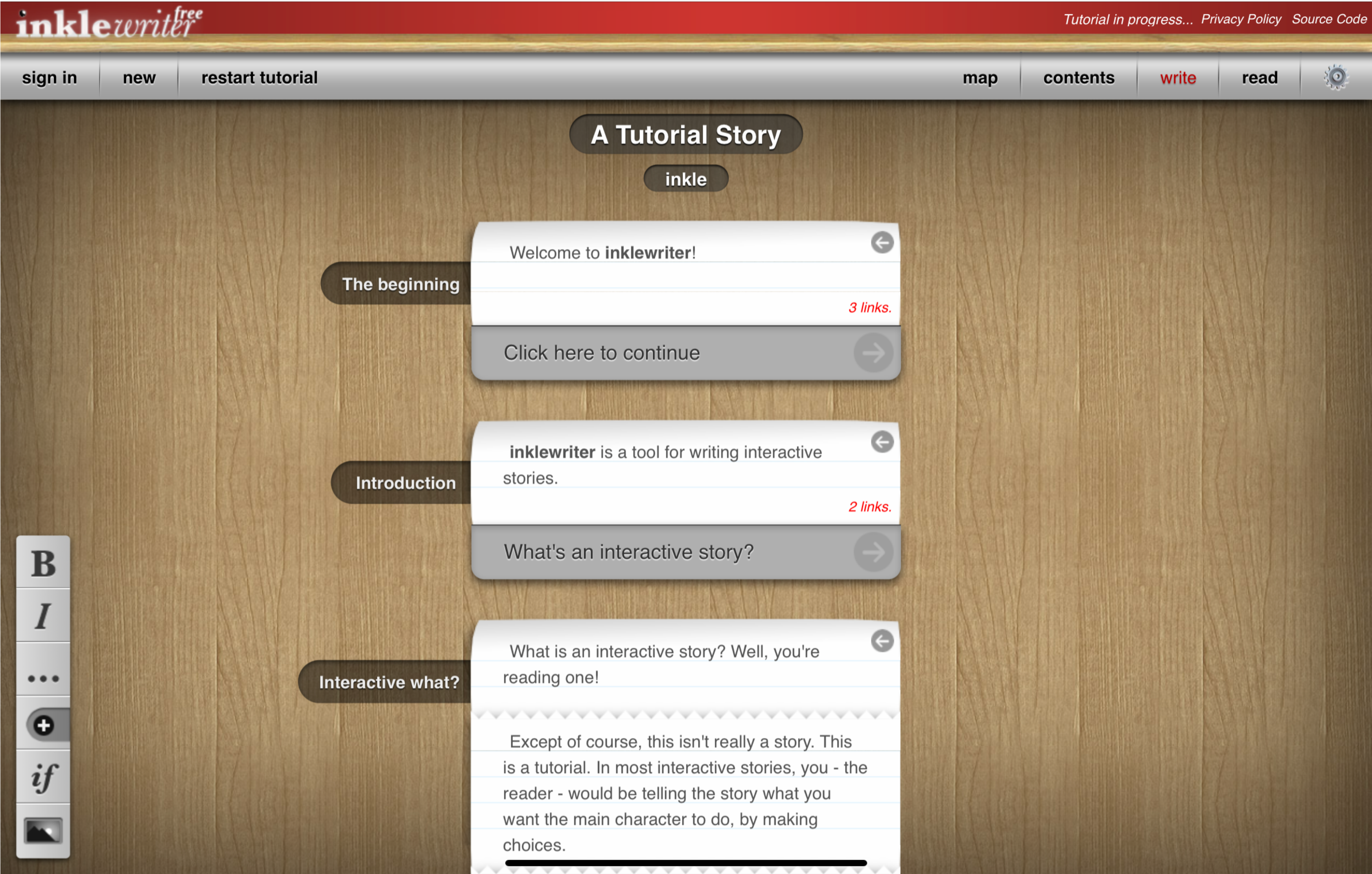

Editing a story in Twine 1.4.


A bird's-eye view of a story map in Twine 1.4.

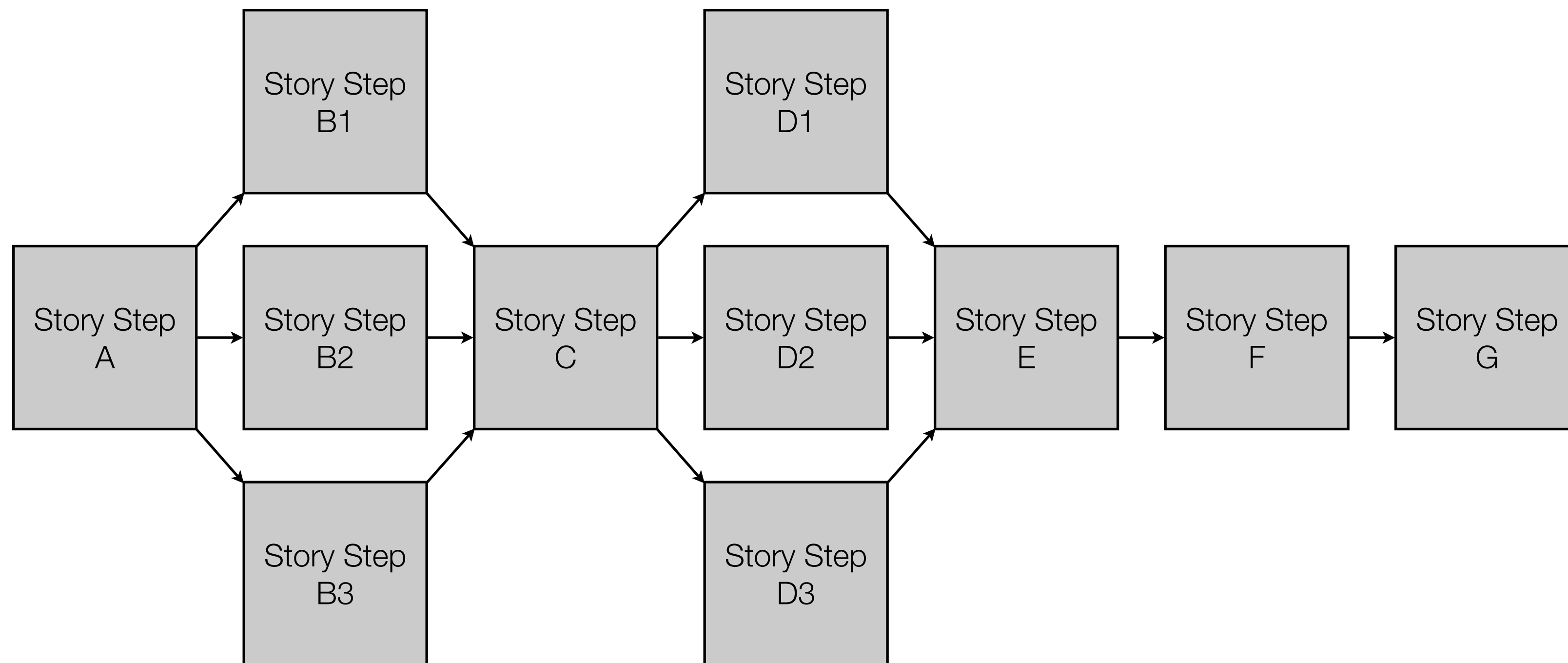

The story list in Twine 2.0.


Editing a story in Twine 2.0.

Inklewriter – <https://www.inklewriter.com>



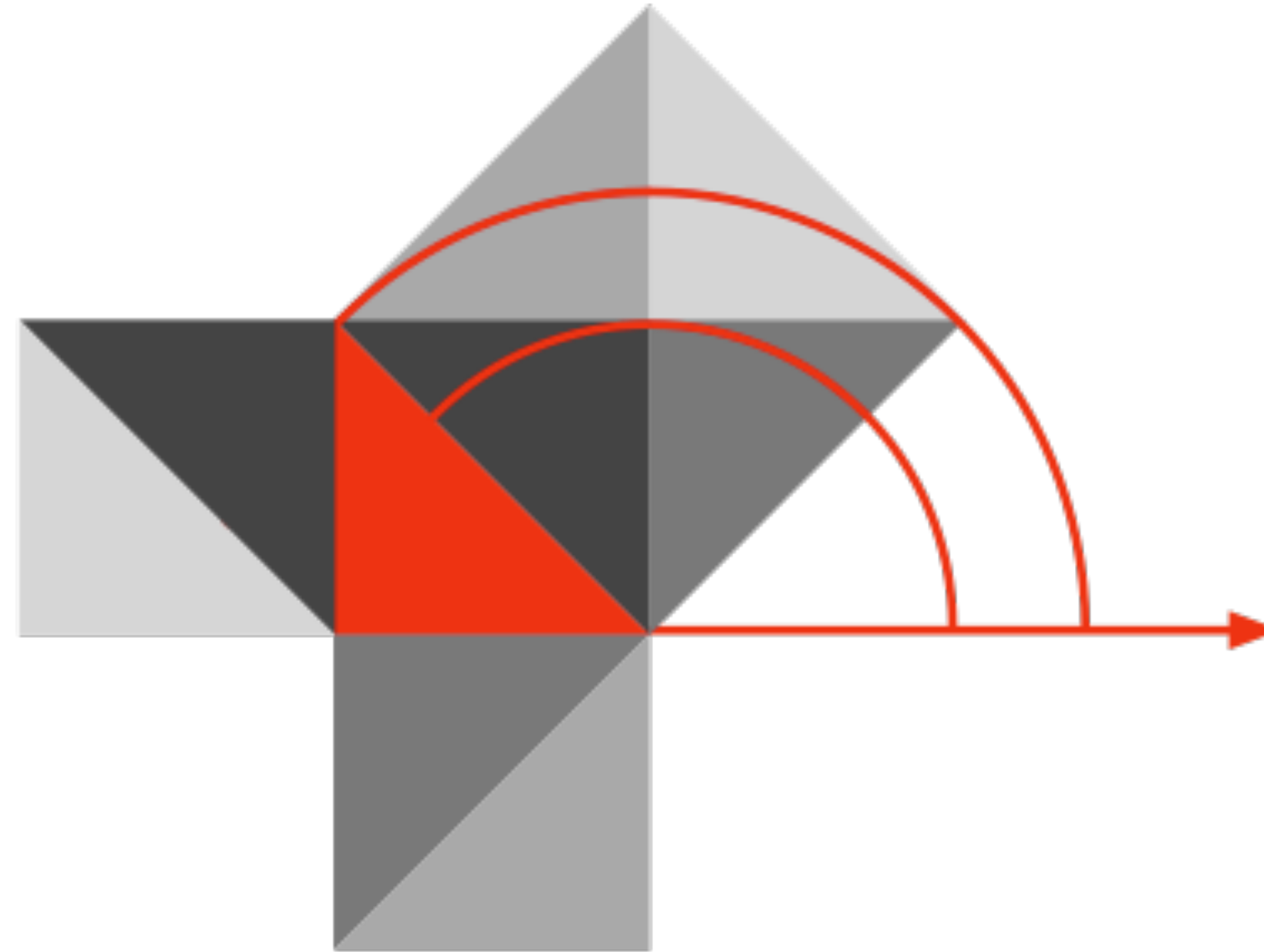
Storytelling for Games (Sheldon) – Controlled Branching



SAMR in Game Selection and Design — Some Examples

- **Substitution:**
 - Games that reiterate traditionally taught points (note: not via disguised multiple choice)
 - Games that exercise procedural mechanics in weakly related settings
- **Augmentation:**
 - Games that exercise procedural mechanics in strongly related settings
 - Games that provide for student discovery of semi-explicit rulesets
- **Modification:**
 - Games that allow for exploration of non-explicit underlying systems and rulesets
 - Games that allow for construction of social superstructures and activities on the game
- **Redefinition:**
 - Games that allow for development of previously unexplored student capabilities
 - Games that allow for exploration of previously inaccessible knowledge domains

Hippasus



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