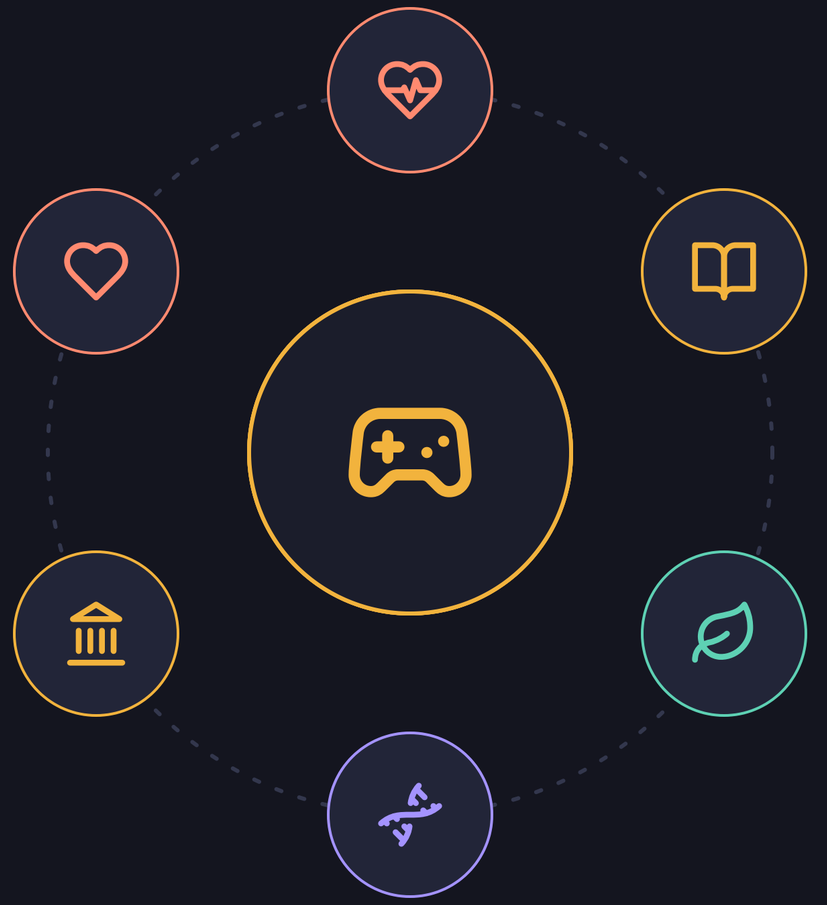
INTRODUCTION · SERIOUS GAMES

Games with a Purpose

Serious games, impact games, and how play became a tool for learning, health and change.



AGENDA

Today’s quest

01 What are serious games?

02 Origins: war games to Games for Change

03 Why games work

04 Six fields of impact

05 Mainstream games with a purpose

06 The field today: awards and winners

07 Designing for impact

08 Takeaways and watch list

01 · WHAT ARE SERIOUS GAMES?

Games built for a purpose beyond fun

A serious game is designed with a primary goal other than entertainment: to teach, train, heal, persuade, raise awareness or solve a real problem. It still has to be a good game.

Education · Health · Training · Social awareness · Research · Persuasion

Many commercial games carry serious themes without the label. This War of Mine, Papers, Please and It Takes Two are sold as entertainment, and still change how players think.

ALSO KNOWN AS

- Serious games
- Games for change
- Games for impact
- Games with a purpose
- Edutainment
- Game-based learning

01 · RELATED TERMS

Four ideas that get mixed up

Serious game

A whole game, designed around a purpose.

EXAMPLE
Re-Mission (2006) for young cancer patients

Gamification

Game elements added to something that is not a game.

EXAMPLE
Duolingo streaks, loyalty points (last lecture)

Game-based learning

Using games, any games, as a teaching tool.

EXAMPLE
Civilization in a history class, Minecraft Education

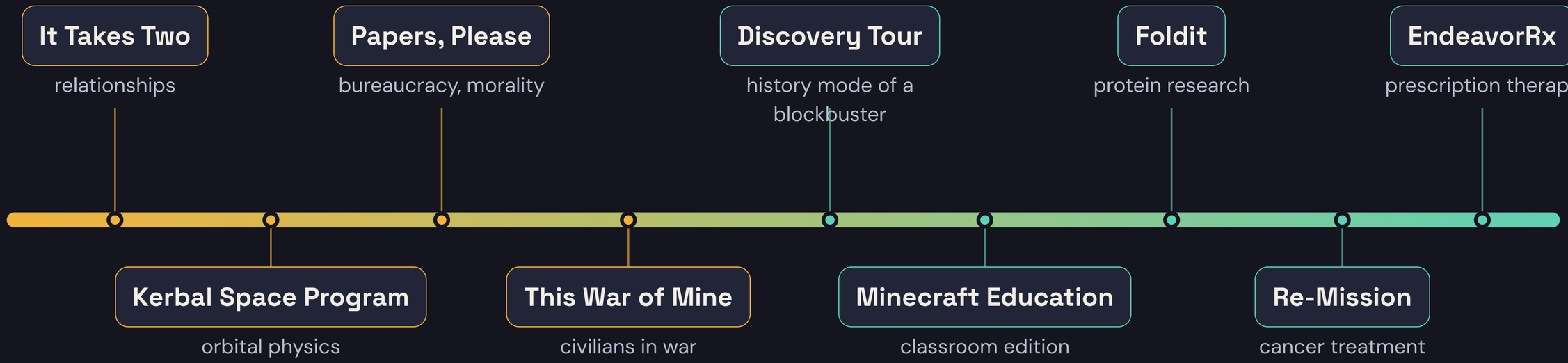
Games with a purpose

Play that produces useful work as a by-product.

EXAMPLE
ESP Game (2004) labelled images; Foldit folds proteins

01 · A SPECTRUM, NOT A BOX

How much purpose is in the game?



← MADE TO ENTERTAIN

MADE FOR A PURPOSE →

02 · ORIGINS

Play has always been practice

From Prussian war games to a movement with its own festival and awards.

02 · SIX ERAS

From the war table to the doctor’s prescription

c. 600 – 1938

Practice for war

Chaturanga, chess, Kriegsspiel, Huizinga

1960 – 1980

First teaching machines

PLATO, Sumerian Game, Oregon Trail, Abt

1983 – 1999

Edutainment

Math Blaster, Carmen Sandiego, school software

2002 – 2010

The movement

America’s Army, Games for Change, Re-Mission, Foldit

2010 – 2019

Science & mainstream

Eterna, Sea Hero Quest, impact awards at TGA and BAFTA

2020 – today

Prescribed & read

EndeavorRx, games on school reading lists

02 · BEFORE COMPUTERS

Games as practice for the real thing

c. 6th c. CE

Chaturanga

India. "Four limbs" of an army: infantry, cavalry, elephants, chariots. Ancestor of chess.

1812 / 1824

Kriegsspiel

Prussia. Von Reisswitz father and son. The army adopted it in 1824 to train officers.

1938

Homo Ludens

Johan Huizinga: play is older than culture. Introduces the “magic circle”.

1970

Serious Games

Clark C. Abt’s book names the field: games with “an explicit and carefully thought-out educational purpose”.

The idea is old: a safe space where mistakes cost nothing, so you can try, fail and try again.

02 · FIRST TEACHING MACHINES

Mainframes in the classroom

1960

PLATO

University of Illinois. First general computer-assisted teaching system.

1964

The Sumerian Game

Mabel Addis (teacher) and IBM: run a city in ancient Sumer.

1971

The Oregon Trail

Three student teachers, one 8th-grade class. MECC versions reach schools for decades.

1983–85

Edutainment

Math Blaster (1983), Where in the World Is Carmen Sandiego? (1985).

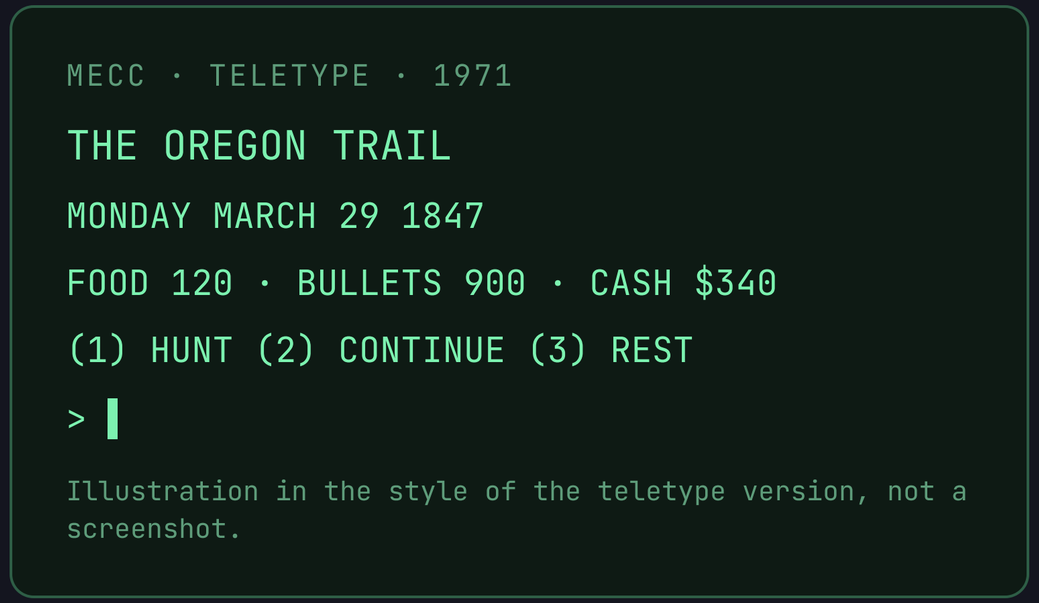


Illustration in the style of the teletype version, not a screenshot.

02 · THE MOVEMENT · 2002–2010

Serious games get organised

2002
America's Army
US Army's free shooter, built for recruitment.

2002
Serious Games Initiative
Ben Sawyer & David Rejeski revive the term for video games.

2003
September 12th
Gonzalo Frasca's newsgame: killing terrorists creates more.

2004
Games for Change
Founded in New York; first meeting had about 42 people.

2004
Games for Health
First conference in Madison, Wisconsin.

2005
Food Force
UN World Food Programme; about 4 million players in its first year.

2006
Re-Mission
HopeLab game for young cancer patients, tested in a clinical trial.

2007
PeaceMaker
Israeli–Palestinian conflict simulation from CMU graduates.

2008
Foldit
University of Washington: players fold proteins for science.

The ESP Game: two strangers label the web

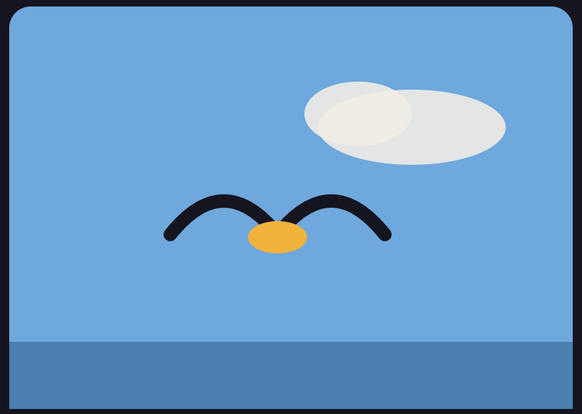
PLAYER A

bird

sky

yellow

flying



AGREED LABEL

flying

PLAYER B

wings

flying

TABOO: ~~bird~~ ~~sky~~

Luis von Ahn & Laura Dabbish, “Labeling Images with a Computer Game”, CHI 2004 · von Ahn, “Games with a Purpose”, IEEE Computer, 2006

02 · 2010 – TODAY

From niche to mainstream

2011 **Eterna**
Players design RNA molecules; the best designs are made in a real lab.

2014 **The Game Awards**
New impact category (Games for Change, renamed Games for Impact in 2015).

2016 **Sea Hero Quest**
A mobile game collects navigation data for dementia research: 2.4M players in 6 months.

2016 **Minecraft Education**
Microsoft launches the classroom edition.

2018 **Discovery Tour**
Assassin's Creed Origins gets a combat-free history mode.

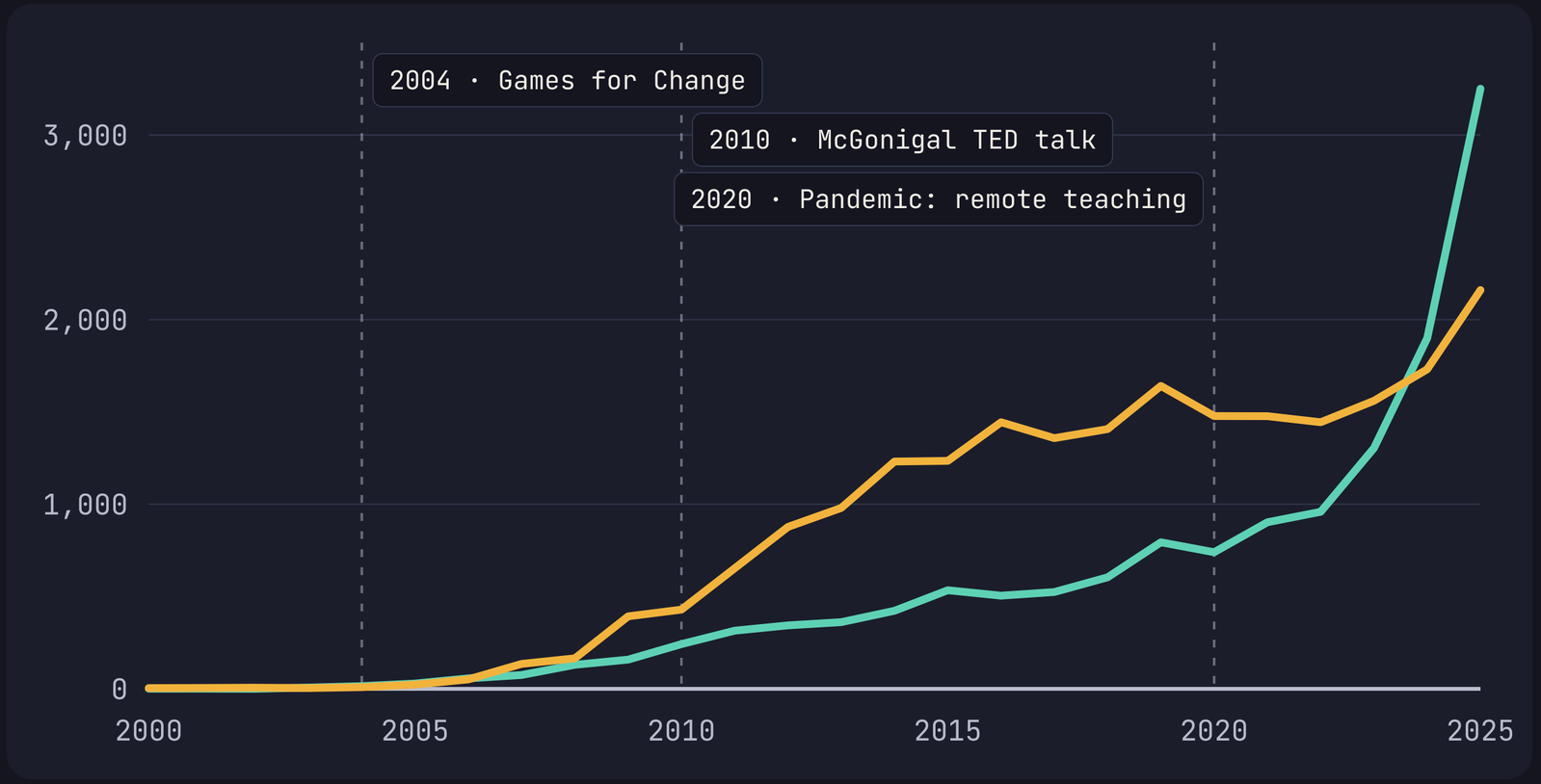
2018 **BAFTA**
First Game Beyond Entertainment award (Hellblade).

2020 **EndeavorRx**
First game authorised by the US FDA as a treatment (ADHD).

2020 **This War of Mine**
Added to Poland's optional school reading list.

02 · THE FIELD IN NUMBERS

A research field appears around 2005



SERIOUS GAMES

2,160

papers in 2025 (4 in 2000)

GAME-BASED LEARNING

3,251

papers in 2025 (1 in 2000)

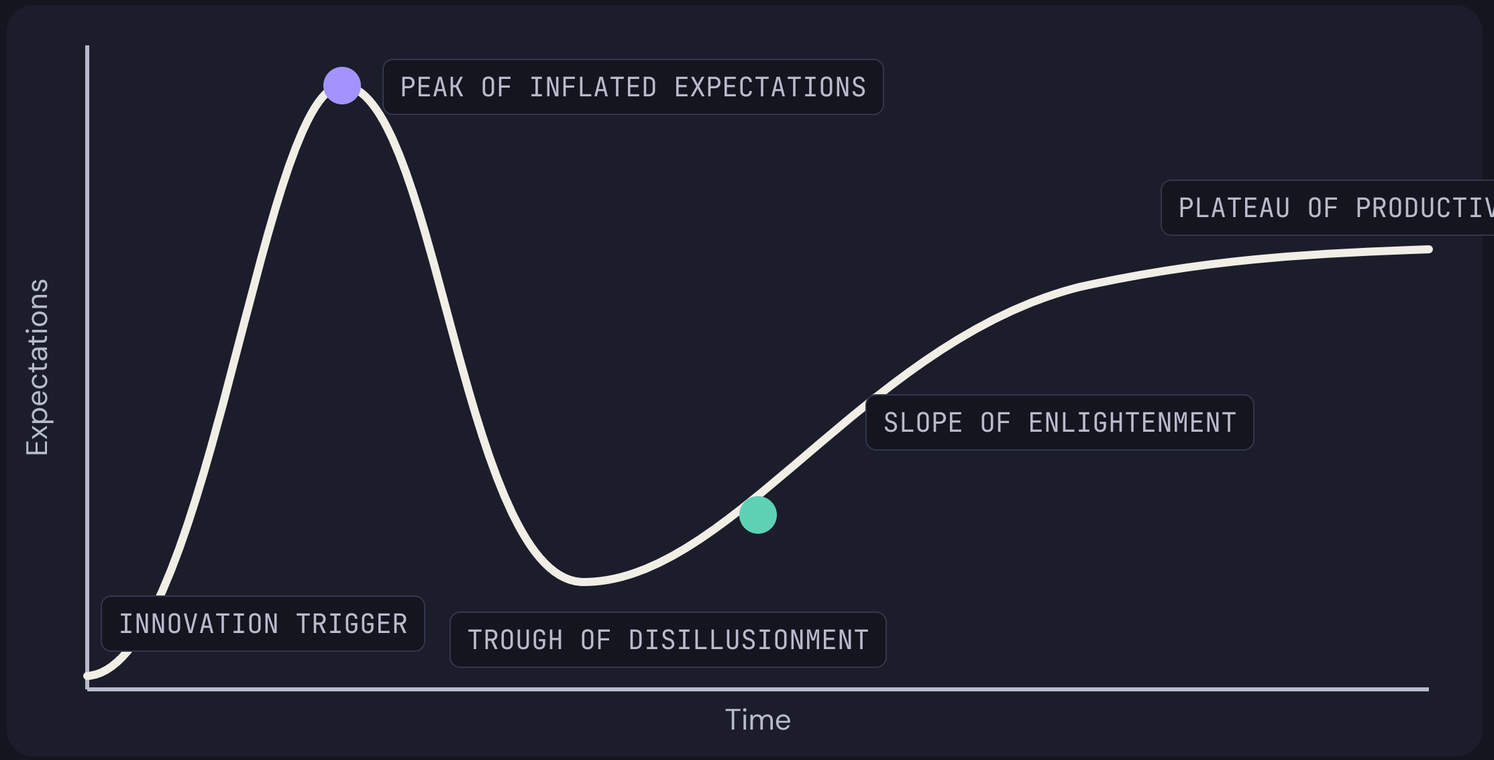
FOR COMPARISON

Gamification: 72 papers in 2011, 9,463 in 2025.

Papers per year with the phrase in title or abstract. OpenAlex (openalex.org), retrieved 29 Oct 2026. Counts are indicative: indexing and wording vary.

02 · HYPE AND REALITY

Where are serious games on the hype cycle?



GAMIFICATION · 2013

Gartner put it at the peak of its 2013 Emerging Technologies hype cycle.

LEARNING GAMES · LATE 2010S

Researchers place them on the slope of enlightenment: past the hype, still proving themselves.

A framing, not a measurement.

03 · WHY GAMES WORK

The magic circle

01 **Separation**
A boundary from everyday life makes immersion possible.

02 **Rules**
Clear rules give structure: you know what counts.

03 **Limitation**
Fewer distractions, more focus on the goal.

04 **Freedom**
Inside the limits you can explore and experiment.

05 **Transcendence**
Try what real life does not allow, safely.

Johan Huizinga, Homo Ludens (1938) · Katie Salen & Eric Zimmerman, Rules of Play (MIT Press, 2003)

03 · WHY GAMES WORK

Seven things that make learning fun

ON YOUR OWN

Challenge
Goals that are hard but reachable

Curiosity
Gaps you want to close

Control
Your choices change the outcome

Fantasy
Be someone, somewhere else

WITH OTHER PEOPLE

Competition
Compare yourself to others

Cooperation
Reach a goal together

Recognition
Others see what you did

Thomas Malone & Mark Lepper, “Making Learning Fun: A Taxonomy of Intrinsic Motivations for Learning” (1987)

03 · WHY A GAME?

A documentary tells. A game lets you do.

DOCUMENTARY / LECTURE		SERIOUS GAME
You watch	→	You act and decide
One path, told to you	→	Many paths: you see consequences
Same for every viewer	→	Adapts to the player
No feedback	→	Constant feedback, measurable progress
Empathy through a story	→	Empathy through a role: “I did this”

03 · DOES IT WORK?

Yes, moderately. Design decides.

READ IT AS

Effect size: how far the average game player moves ahead of the comparison group, in standard deviations.

CAVEAT

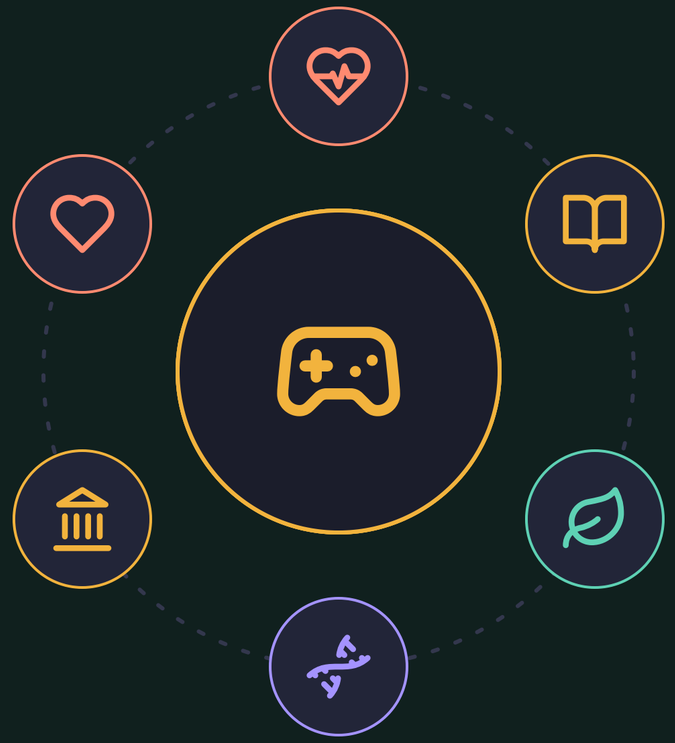
Games used *alone*, with no teaching around them, often do worse (Sitzmann 2011).

Wouters et al., J. Educ. Psych. 105(2), 2013 · Clark, Tanner-Smith & Killingsworth, Rev. Educ. Research 86(1), 2016 · DeSmet et al., Preventive Medicine 69, 2014 · Sitzmann, Personnel Psychology 64(2), 2011

04 · FIELDS OF IMPACT

Six places games make a difference

Health, education, environment, citizen science, civics and empathy.



04 · HEALTH

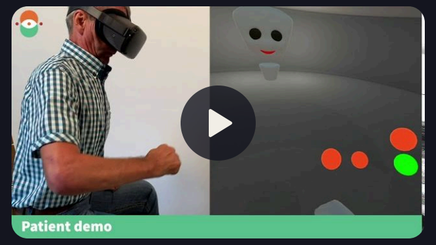
Health: patients, rehab and prevention

Games that help people understand an illness, stick to treatment or keep moving.

Re-Mission

HopeLab, USA, 2006. Fight cancer inside the body as a nanobot.

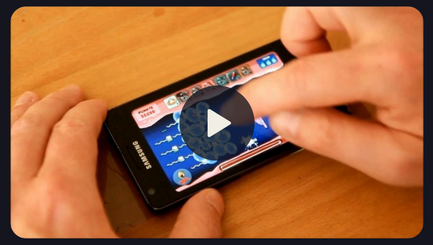
youtu.be/EEei9zHa8cs



Rewellio

Austria, from 2017. VR and tablet stroke rehab at home.

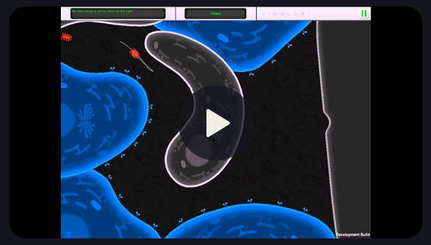
youtu.be/9xjbHx-xe74



SpermEx

Ovos, Vienna, 2013. Contraception as tower defence.

youtu.be/DWZD-eGi13I



Virulent

UW–Madison, 2011. Be the virus: learn how infection works.

youtu.be/I-ICdm1xu7U

Walkr

Fourdesire, Taiwan, 2014. Your steps fuel a spaceship. 7.5M+ downloads.

youtu.be/7XNyp9Jhvg0

EVIDENCE

Randomised trials and an FDA authorisation: the strongest proof of any field.

MADE IN AUSTRIA

Rewellio (stroke rehab) and SpermEx (Ovos, Vienna).

NEEDS

Clinical partners, testing with patients and long-term funding.

04 · HEALTH · A CLOSER LOOK

From a clinical trial to a prescription

RE-MISSION · PEDIATRICS, 2008

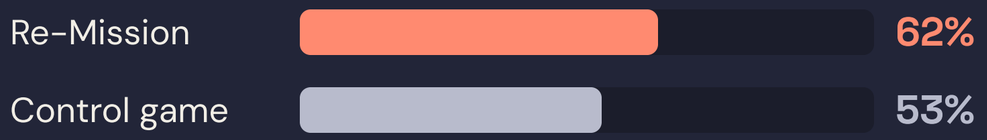
375

patients aged 13–29 in a randomised trial

34

cancer centres in the USA, Canada and Australia

ANTIBIOTIC DOSES TAKEN (PILL MONITOR)



ENDEAVORRX · US FDA, 2020

The first video game authorised as a medical treatment

- ✓ Children with ADHD, alongside other therapy
- ✓ Authorised June 2020 for ages 8–12, extended to 8–17 in 2023
- ✓ Available only on prescription
- ✓ Improves a measured attention score; everyday symptoms may not change

Kato et al., “A Video Game Improves Behavioral Outcomes in Adolescents and Young Adults With Cancer”, Pediatrics 122(2), 2008 · FDA De Novo DEN200026 (2020), 510(k) K231337 (2023)

04 · EDUCATION

Education: from history to phonics

Games inside a curriculum, from preschool to university.

Discovery Tour

Ubisoft, 2018. Ancient Egypt as a combat-free museum.

youtu.be/_yMDdQKfv70

At Play in the Cosmos

UW–Madison & W.W. Norton, 2017. Astronomy course as missions.

youtu.be/63Li7g1tsyE

Plingo

Mindojo, Israel. Adaptive English games with speech recognition.

youtu.be/CzOSkAC0xUk

Edurino

Munich, 2021. Toy figures unlock learning games, ages 4–8.

youtu.be/kFOU8aL1qTQ

Minecraft Education

Microsoft, 2016. The sandbox as a classroom.

youtu.be/AZ7AcvbebKo

OLDEST FIELD

From The Oregon Trail (1971) to Minecraft Education in 100+ countries.

TWO ROUTES

Built for school (Plingo, Edurino) or a mode of a blockbuster (Discovery Tour).

WATCH OUT

At Play in the Cosmos stopped working in 2022: games need upkeep.

04 · EDUCATION · A CLOSER LOOK

When the blockbuster becomes a museum

- ✓ Walk through Ptolemaic Egypt at your own pace
- ✓ 75 guided tours written with historians and Egyptologists
- ✓ No combat, no missions, no fail state

CLASSROOM STUDY · UNIVERSITÉ DE MONTRÉAL

About 330 students aged 12–16 scored better on history tests after the tour.

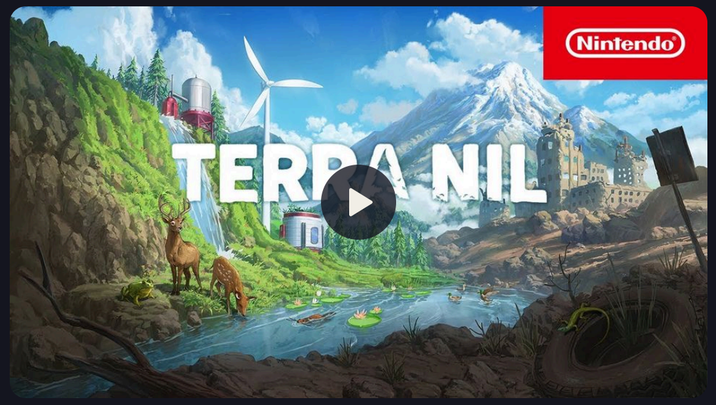
But: students taught by a teacher with the same material scored higher still.

Éthier, Lefrançois & Déry, Recherches en didactique des langues et littératures / RRLMM 15, 2022 (doi:10.7202/1091402ar); press reports of the study, 2018

04 · ENVIRONMENT

Environment: heal, protect, decide

Climate and nature, from empathy to systems thinking.



Terra Nil

Free Lives, South Africa, 2023. A reverse city-builder: heal the land, then leave no trace. 8% of Steam profits go to the Endangered Wildlife Trust.

youtu.be/bgyDDZAdynQ

Endling: Extinction is Forever

Herobeat, Barcelona, 2022. Raise the last fox cubs in a world ruined by humans. BAFTA and Games for Change Game of the Year 2023.

youtu.be/2rCLc-WXOFo

Fate of the World

Red Redemption, Oxford, 2011. Run global climate policy for 200 years, on a climate model by Oxford physicist Myles Allen.

youtu.be/pDU-g947NJk

EMPATHY

Endling: feel what is lost.

POSITIVE ACTION

Terra Nil: practise repair.

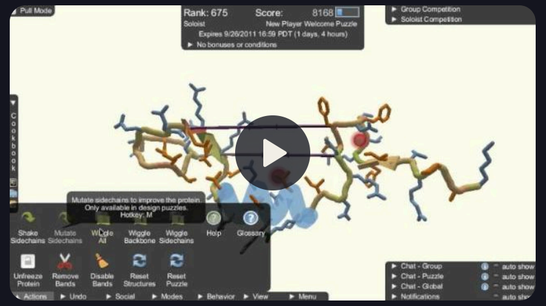
SYSTEMS THINKING

Fate of the World: see the trade-offs.

04 · CITIZEN SCIENCE

Citizen science: play that does real work

Players solve problems that computers or labs cannot solve alone.



Foldit

University of Washington, 2008. Fold proteins in puzzles that feed real research.

youtu.be/DvYFjo3vC-k

Eterna

Stanford & Carnegie Mellon, 2011. Design RNA; the best designs are built in a lab.

youtu.be/V2qtNyJ3KQg

Sea Hero Quest

Deutsche Telekom & UCL, 2016. Navigation data for dementia research.

youtu.be/HtXfnxJCpCc

Re:Imagine London

Zaha Hadid Architects & Epic, 2024. Plan real London sites in Fortnite.

youtu.be/cfcleOOPUcs

HUMAN COMPUTATION

People still beat algorithms at spatial puzzles and spotting patterns.

REAL OUTPUT

Peer-reviewed papers that credit the players as authors.

DESIGN

Short puzzles, instant feedback, leaderboards and a community.

04 · CITIZEN SCIENCE · IN NUMBERS

What players have achieved

57K+

Foldit players credited as authors of one Nature paper (2010)

3 weeks

for Foldit players to model an HIV-like protease that resisted scientists for over a decade (2011)

4.3M

Sea Hero Quest players: navigation data that would take centuries to gather in a lab

100K+

Eterna players designing RNA by 2016; the best designs are built and tested

The pattern: break a hard problem into puzzles humans are good at (shapes, spatial intuition, patterns), give feedback and a community, then feed the results back to science.

Cooper et al., Nature 466, 2010 · Khatib et al., Nat. Struct. Mol. Biol. 18, 2011; University of Washington, 2011 · Deutsche Telekom · Stanford Medicine, 2016

04 · CIVICS & HISTORY

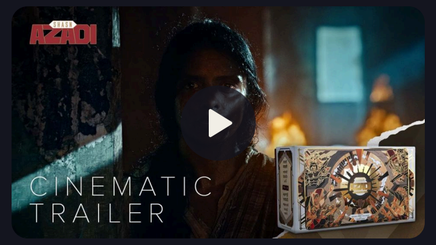
Civics and history: take a side you never could

Conflict, resistance and revolution, seen from the inside.

PeaceMaker

ImpactGames, 2007. Lead Israel or Palestine toward peace.

youtu.be/WF8e4ROQJDM



SHASN: AZADI

Memesys, India, 2022. Board game about independence movements.

youtu.be/P6a-g-Bav5w

Through the Darkest of Times

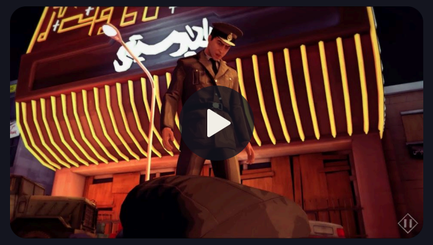
Paintbucket, Berlin, 2020. Resist the Nazis in Berlin.

youtu.be/PATk-zo1RGM

This War of Mine

11 bit studios, Poland, 2014. Survive a siege as a civilian.

youtu.be/gotK5DLdVvI



1979 Revolution

iNK Stories, 2016. Iran's revolution through a photographer's lens.

youtu.be/_50OJ1uuGoc

PERSPECTIVE-TAKING

PeaceMaker's makers recommend playing the other side first.

MEASURED

PeaceMaker study: knowledge rose across 167 students from four countries.

NOT ONLY DIGITAL

SHASN: AZADI is a board game, with a Games for Change award (2023).

04 · CIVICS · A CLOSER LOOK

This War of Mine: a war game without soldiers

Inspired by the siege of Sarajevo (1992–96). You scavenge at night, decide who eats, and live with what you did.

9M+
copies sold by 2024

$500K
raised for War Child by a charity DLC

2020
Added to Poland's optional school reading list, the first game on it

04 · EMPATHY

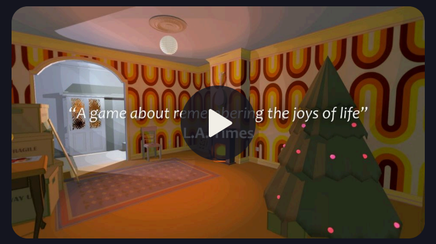
Empathy: live someone else’s life for an hour

Games where you are not the hero, but the person.

Body of Mine VR

Cameron Kostopoulos, 2023. Inhabit another body; hear trans stories.

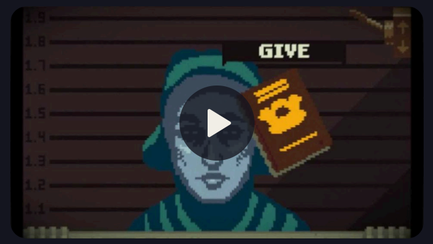
youtu.be/FE7KYISf7cI



Before I Forget

3-Fold Games, UK, 2020. A home seen through dementia.

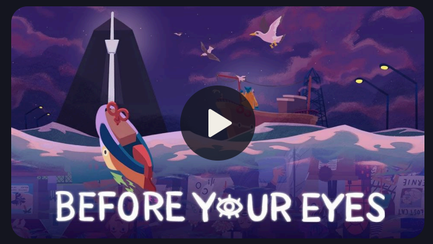
youtu.be/9BweB5OCa7M



Papers, Please

Lucas Pope, 2013. Border guard in a dystopian state.

youtu.be/_QP5X6fcukM



Before Your Eyes

GoodbyeWorld, 2021. A life story you move through by blinking.

youtu.be/hN2aqi5MhXo

Venba

Visai Games, Canada, 2023. A Tamil family’s story told through cooking.

youtu.be/HRVt3213z6s

SHORT

Many take one to three hours. Venba takes about 90 minutes.

AWARD FAVOURITES

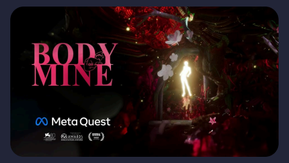
Before Your Eyes: BAFTA 2022. Venba: IGF Grand Prize 2024.

COMMON THREAD

What you do is what you feel. Next slide.

04 · DESIGN LESSON

The mechanic is the message

	WHAT YOU DO	WHAT YOU FEEL / LEARN
	Papers, Please Stamping documents	→ How rules turn ordinary people into enforcers
	Before Your Eyes Blinking	→ You cannot hold on to moments; life slips past
	Venba Cooking from a torn recipe book	→ Rebuilding a recipe is rebuilding an identity
	**Body of Mine VR** Touching your own body	→ Stories unlock through the body you are in

05 · MAINSTREAM GAMES WITH A PURPOSE

Not labelled serious, still changing behaviour

Ring Fit Adventure

Nintendo, 2019. An RPG where squats are your attacks. 15M+ sold.

Wii Fit

Nintendo, 2007. A balance board in millions of living rooms. 22.7M sold.

Pokémon GO

Niantic, 2016. Engaged players walked ~1,500 more steps a day.

Zombies, Run!

Six to Start & Naomi Alderman, 2012. Audio story for runners. ~10M downloads.

Plague Inc.

Ndemic, 2012. Think like a pandemic. 130M+ players; invited by the US CDC.

Kerbal Space Program

Squad, 2015. Rocket science through explosions. NASA co-built an update.

Tiny Bookshop

neoludic, Germany, 2025. Match readers with the right book.

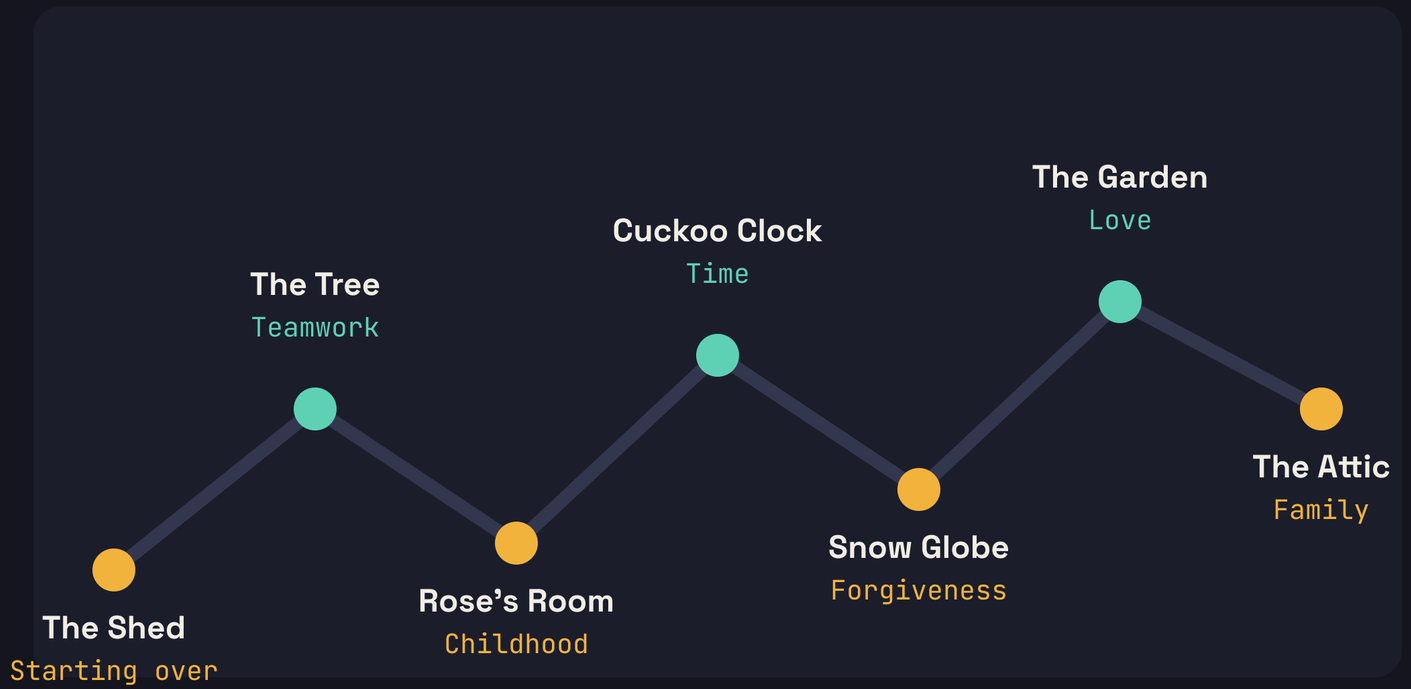
Senua's Saga: Hellblade II

Ninja Theory, 2024. Psychosis from the inside, made with neuroscientists.

05 · A CLOSER LOOK

It Takes Two: couples therapy, co-op

- ✓ Game of the Year, The Game Awards 2021
- ✓ Co-op only: you cannot play it alone
- ✓ 20M+ copies sold



Awards, winners and where to go next

Impact games now compete at the biggest award shows, and many of the winners are commercial hits.

06 · THE GAME AWARDS · GAMES FOR IMPACT

Twelve winners, 2014–2025

2026 nominees: mid-November
Ceremony: 10 Dec 2026

Valiant Hearts: The Great War

WWI through real letters

Life Is Strange

Bullying, depression, suicide

That Dragon, Cancer

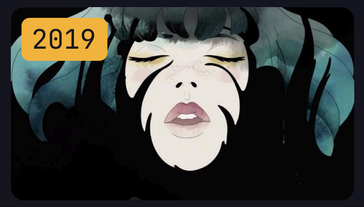
A child's terminal cancer

Hellblade: Senua's Sacrifice

Psychosis

Celeste

Anxiety and depression



Gris

Grief

Tell Me Why

A trans protagonist

Life Is Strange: True Colors

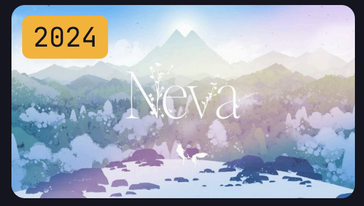
Empathy and grief

As Dusk Falls

Family and moral choice

Tchia

Kanak culture, New Caledonia



Neva

Grief and environment

South of Midnight

Southern folklore and trauma

thegameawards.com (2018–2025 rewind pages); Wikipedia for 2014–2017. In 2014 the category was called Games for Change.

06 · MORE AWARDS

BAFTA and Games for Change

BAFTA · GAME BEYOND ENTERTAINMENT	
2018	Hellblade: Senua's Sacrifice ★
2019	My Child Lebensborn
2020	Kind Words
2021	Animal Crossing: New Horizons
2022	Before Your Eyes
2023	Endling: Extinction is Forever ★
2024	Tchia ★
2025	Tales of Kenzera: Zau
2026	Despelote

GAMES FOR CHANGE · GAME OF THE YEAR	
2016	Life Is Strange ★
2017	Walden, a game
2018	Life Is Strange: Before the Storm
2019	Nintendo Labo
2020	Dreams
2021	Alba: A Wildlife Adventure
2022	Dot's Home
2023	Endling: Extinction is Forever ★
2024	Stay Alive, My Son
2025	Indika
2026	South of Midnight ★

★ Won more than one of the big three awards (TGA, BAFTA, G4C)

Hellblade, Life Is Strange, Endling, Tchia, South of Midnight

GAMES FOR CHANGE AWARDS 2025

800

submissions from 55 countries. The first G4C meeting in 2004 had about 42 people.

BAFTA Games Awards (ceremony years) · Games for Change press releases · gamesmarket.global, 2025

06 · WHAT WINS TODAY

Four themes and one big shift

Mental health & grief

Hellblade, Celeste, Gris, Neva, Tales of Kenzera, Consume Me

Culture & identity

Venba, Tchia, Tell Me Why, South of Midnight, Despelote

History & memory

Valiant Hearts, My Child Lebensborn, Svoboda 1945, Stay Alive, My Son

Nature & climate

Endling, Alba, Terra Nil, Neva

THEN

Educational software, made by NGOs and universities, free, small audience

NOW

Commercial narrative games, made by studios, sold on every platform, millions of players

06 · YOUR TURN

Where to take a game with a purpose

Games for Change Student Challenge

Game jam and competition for ages 8–25, with yearly themes.

learn.gamesforchange.org

Games for Change Awards & Festival

Annual awards; festival in New York each July, events in Europe.

www.gamesforchange.org

Unity for Humanity

Grants for real-time 3D projects with social impact ($500K pool in 2024).

unity.com

A MAZE. Berlin

Festival and awards for independent and experimental games, every May.

2026.amaze-berlin.de

Deutscher Computerspielpreis

German national game award, with a Best Serious Game category.

deutscher-computerspielpreis.de

PGDA Austria

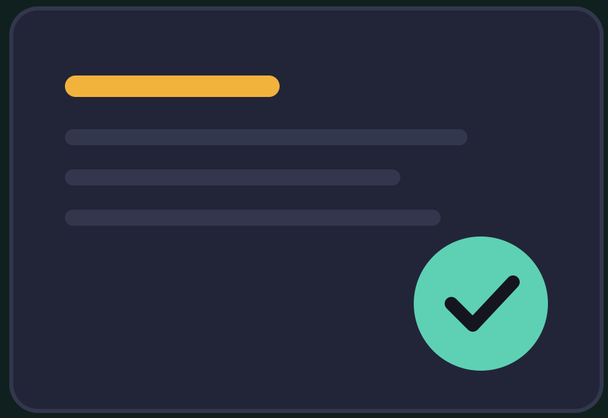
Austrian game developers' association: Talent Award, mentoring, funding calls.

pgda.at

07 · DESIGNING FOR IMPACT

Making one is hard

What goes wrong in serious game projects, and how to keep both the purpose and the fun.



07 · CHALLENGES

Nine ways a serious game project struggles

TEAM & PARTNERS

Missing game expertise
Educators and researchers rarely build games.

Different goals
Funder, university and studio each have an agenda.

Limited money
Serious budgets are small; scope must be too.

CONTENT & FUN

Accuracy vs. playability
Correct content without killing the game.

Bias and propaganda
One-sided games lose credibility.

Learning vs. fun
Too much lesson: boring. Too much game: no impact.

PROOF & REACH

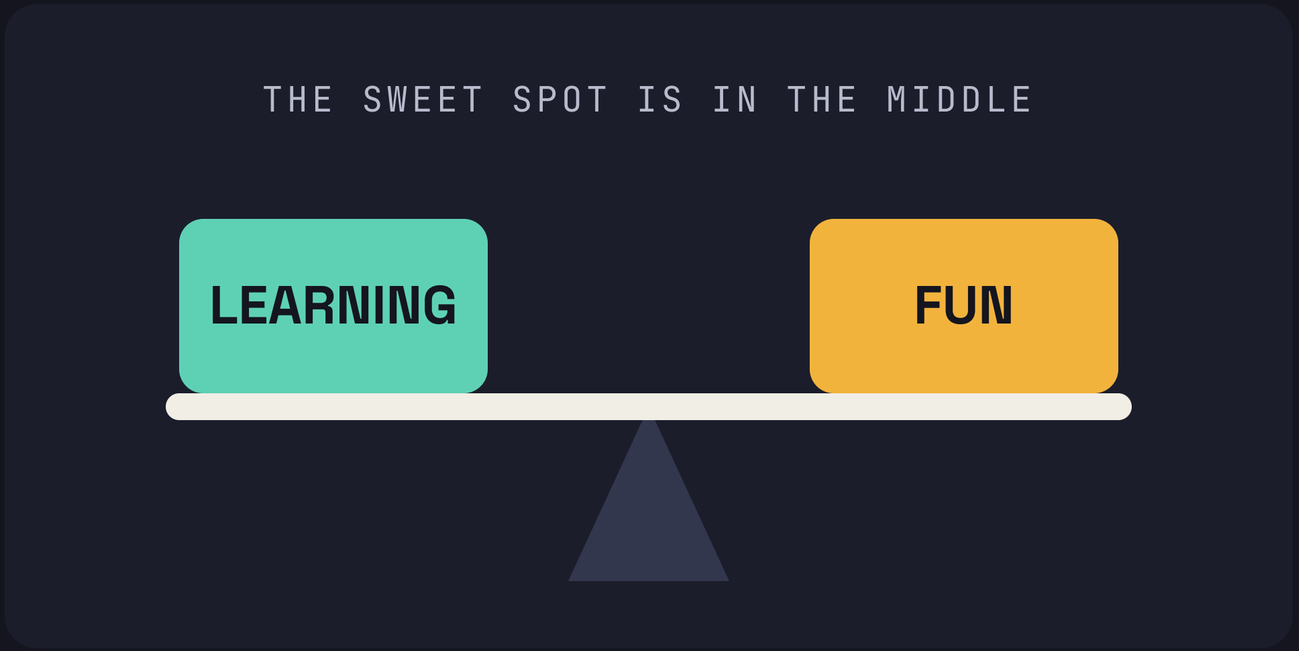
Testing with the real audience
How do you playtest with 7-year-olds or patients?

Fitting the curriculum
Teachers need it to fit a 50-minute lesson.

Measuring the outcome
Did anyone learn or change? Plan it from day one.

07 · THE CORE BALANCE

Learning and fun on the same seesaw



TOO MUCH LESSON

A quiz with a game skin. Players leave; nothing is learned.

TOO MUCH GAME

Great fun, but the message is a cutscene players skip.

THE FIX

Make the core mechanic the thing you want to teach.

07 · BEFORE YOU BUILD

Six questions for any serious game

1 Who is the player?

Age, prior knowledge, how long they will play, where.

2 What should change?

Know, feel or do something. Pick one and write it down.

3 Why a game?

What does play add that a video or a text cannot?

4 What is the core mechanic?

The action repeated most should carry the message.

5 How will you know it worked?

Observation, a short quiz, a behaviour you can see.

6 Who tests it, and when?

Real target players, early and often.

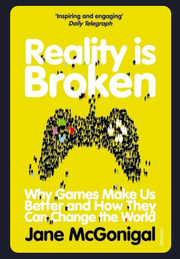
WATCH · 20 MIN

Gaming can make a better world

Jane McGonigal at TED, 2010

Game designer and researcher. Argues that the skills gamers build (optimism, social fabric, “blissful productivity”, epic meaning) could solve real-world problems.

youtu.be/dE1DuBesGYM



BOOK · 2011

Reality Is Broken: Why Games Make Us Better and How They Can Change the World

LEVEL COMPLETE

Four things to take home

1 Serious games are old.

Kriegsspiel trained officers in 1824. What is new is the scale, the evidence and the awards.

2 Purpose first, but fun is not optional.

If nobody plays, nothing is learned. The core mechanic should carry the message.

3 They work, moderately.

Effects around 0.3: real, not magic. Design and the teaching around the game decide.

4 Mainstream games count too.

Papers, Please, This War of Mine and It Takes Two change minds without the label.

GAME OVER · THANKS FOR PLAYING

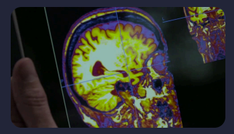
Questions?

Which game taught you something you still remember?

WATCH LIST

Jane McGonigal: Gaming can make a better world
youtu.be/dE1DuBesGYM

Luis von Ahn: Massive-scale online collaboration
youtu.be/-Ht4qiDRZE8



Sea Hero Quest: the findings
youtu.be/HtXfnxJCpCc

An introduction to Foldit
youtu.be/DvYFjo3vC-k

Games with Purpose: student projects 2024–2025
youtu.be/2m-Oc23UY0I