

From Playing to Designing

Educational Video Games as Curriculum Practice

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Play. Analyze. Design.

*7 Generation
Games*



Today's movement

Participants move from experience to curriculum creation.

1

PLAY

Notice what the game asks you to do

2

ANALYZE

Connect mechanics to learning

3

DESIGN

Build a playable learning idea

4

PLAN

Choose a classroom entry point

Games create contexts for using knowledge

Situated learning places concepts inside purposeful activity.

Learning develops through ways of seeing, valuing, and acting within a world.

Gee's central contribution: knowledge becomes usable when learners encounter it through action, identity, feedback, and problem solving.

A useful game asks learners to:

- interpret a situation
- make a consequential choice
- use feedback to revise

DISCUSSION

Where does the learning live: in the information, the action, or the feedback?

Research foundations for learning through games

The literature connects game design with situated learning, cultural relevance, and future pathways.

SITUATED LEARNING

Games embed concepts within action, feedback, and problem solving rather than presenting knowledge in isolation.

Gee, 2003

CULTURE AND CONTEXT

Rural Indigenous educators identify cultural relevance and local conditions as important influences on STEM learning.

DeMars et al., 2022

PERSEVERANCE IN MATHEMATICS

Dakota cultural values can provide a meaningful context for mathematical reasoning and persistence.

DeMars & Longie, 2018

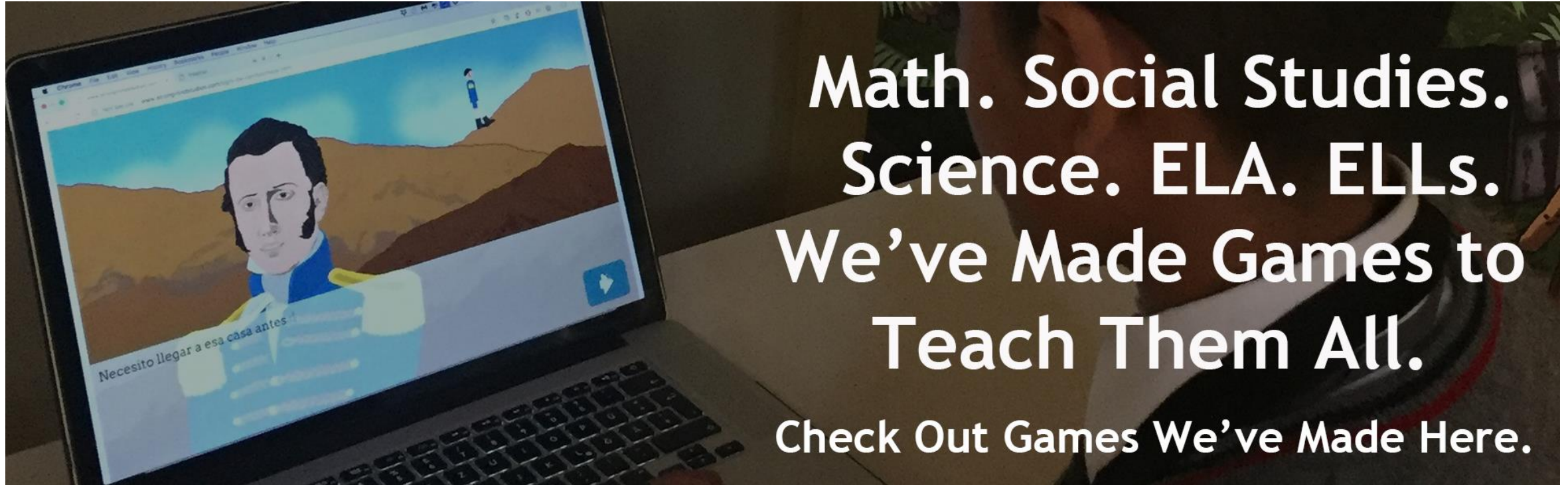
CAREER EXPLORATION

Game-based environments can connect academic learning with exploration of health and STEM careers.

DeMars, 2020

7 Generation Games begins with what players should learn

Research, cultural knowledge, and play shape the game around that purpose.



51

games made

200K+

users informing
design

30%

reported math-
score
improvement

One portfolio, several curriculum pathways

Fish Lake	Fractions	Ojibwe history and survival
Making Camp Ojibwe	Multiplication and division	Village building and history
Making Camp Lakota	Division	Lakota language, culture, and history
Forgotten Trail	Fractions and statistics	Ojibwe migration and history
AzTech series	Fractions and statistics	Maya and Latino history

<https://www.growingmath.org/games-for-growing-math/>



Guided play

Choose one game. Play for 10–12 minutes.

MECHANIC

What action repeats?

KNOWLEDGE

What must a player understand?

FEEDBACK

How does the game respond?

CONTEXT

How does story or culture shape meaning?

Debrief: trace the curriculum through play



Curriculum analysis question

Does the academic idea change what the player can do, or does it merely interrupt the game?

PAIR SHARE

Identify one strong alignment and one missed opportunity.

Designing a game means designing a curriculum system



PURPOSE

What should players come to understand?



DECISIONS

What choices require that understanding?



SYSTEM

What rules make those choices matter?



REPRESENTATION

Whose knowledge, language, and story appear?



REVISION

What feedback helps players try again?

7 Gen Blocks lowers the technical barrier

Educators supply the content knowledge. The platform guides game construction.

1

**Choose a
learning goal**

2

**Add questions
or challenges**

3

**Select game
elements**

4

**Playtest and
revise**

The current 7 Generation Games site describes a “type and click” process and a one-hour introduction to game creation.

DEMO

7 GEN BLOCKS GAME BUILDER

Snap together virtual blocks to make educational games without code.

What do you want to do?

- ☐ Create a New Game
- ☐ Edit an Existing Game



Get the Game
Builder



Design sprint

Create a game concept someone could understand in one minute.

LEARNING

Players will understand...

PLAYER ROLE

The player becomes...

CORE CHOICE

Again and again, the player decides...

FEEDBACK

The game shows the result by...

CULTURAL GROUNDING

Knowledge comes from / is accountable to...

WIN CONDITION

Success means...

Culturally responsive design requires relationships

Representation carries responsibility.

Begin with people

Invite community knowledge holders and partners early.

Build reciprocity

Clarify benefits, ownership, review, and compensation.

Protect knowledge

Honor protocols, permissions, and data sovereignty.

DESIGN CHECK

Who has authority to tell this story?

Who reviews the representation?

Who benefits from the finished game?

Playtest the learning, not only the interface

OBSERVE

Where do players pause, guess, or use the target idea?

ASK

What did the choice mean? How did you know what to try next?

REVISE

Change one rule, prompt, or feedback loop. Then test again.

A successful playtest reveals what the game teaches in practice.

Possible classroom entry points

Start where the design work serves an existing learning goal.

K–12 lesson

Use a finished game to introduce or apply a concept.

Student project

Ask learners to represent understanding through a playable system.

Teacher education

Analyze alignment among goals, mechanics, context, and assessment.

Community partnership

Co-design a game grounded in local knowledge and priorities.

Before you leave

Write one specific next step.



A game I will explore...



A learning goal suited to game design...



A person or community partner I should involve...



A first step I can take within two weeks...

References and resources

DeMars, A. (2020). Empiric Empires: Game-based learning preparing students for health careers. U.S. Department of Health and Human Services.

DeMars, A., Taken Alive, J., Ortiz, M., et al. (2022). Educators' perspectives on factors impacting STEM achievement in rural Indigenous student-serving schools. *The Rural Educator*, 43(1), 24–36.

DeMars, A., & Longie, E. (2018). The value of perseverance: Using Dakota culture to teach mathematics. *Transmotion*, 4(2), 113–131.

Gee, J. P. (2003). What video games have to teach us about learning and literacy. Palgrave Macmillan.

7 Generation Games. (2026). Games That Make You Smarter. <https://www.7generationgames.com/>

Sites you'll want to know

growingmath.org - Games , videos and lesson plans found here

7genblocks.com – Documentation and resources for the no-code game builder

<https://game-builder-7gen.com/login> Go straight to the game builder to start building

7generationgames.com – Blogs, news, games, customized development



Sites you'll
want to
know



Contact us!

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