

# The Intentional Gamer

**Gerard 'Gerry' C. Petereit**  
**Technical Assistant**  
**Senior Instructional Designer**  
**Edvance Research, Inc.**  
**[gpetereit@edvanceresearch.com](mailto:gpetereit@edvanceresearch.com)**

# Introduction

## Overview

- Edvance Research
- Technical & ISD
- Texas 21st
- 122 Grantees
- 776 Centers
- 185,439 students

## Session

### Intentional Gamer

- Game-Based Learning
- Game Design
- Lesson Planning
- Game Development
- Gaming in Afterschool
- Q&A

# Objectives

---

Knowledge: Identify the benefits of game-based instruction.

Examination: Examine the principal components of game-based-learning design.

Comprehension: Learn how to incorporate gaming activities into your lesson plans.

Application: Develop an intentional game-based activity to deploy in your program.

Reflection: Identify common aspects of GBL activities used in Texas Afterschool programs

# Game-Based Learning

*Individual or group instructive events that meet educational objectives to improve academic success, enhance student engagement, serve in workforce development, and increase graduation rates.*

# Benefits of Game-Based Learning

## Student Retention Based on Delivery Method

- Lecture
- Reading
- Media
- Demonstration
- Discussion
- Hands-On
- Immediate Use



Motorola University: Creating Mindware for the 21st Century, Corporate University Xchange May/June 1996, Vol 2 No 3 and NTL Institute for Applied Behavioral Science, 300 N. Lee Street, Suite 300, Alexandria, VA 22314.

# Benefits of Game-Based Learning

Interest - Attention - Motivation



**Academic Performance**

**Student Engagement**

**STEM Expertise**

**Workforce Skills**

# Application of Game-Based Learning

Games are an innovative and challenging educational method, and have been used as a teaching strategy in both child and adult education.



## Examples

- Military
- Medical
- Corporate
- Fitness and Exercise
- Driver's Education
- Airlines
- Construction
- Engineering

# Traditional and Game-Based Learning

Traditional Classroom	GBL
Teacher is the expert and holds knowledge	Student is the explorer
Teacher directs thinking, student receive	Student discover the reality modeled
Linear and rational	Relevant to objective, multiple disciplines
Part to whole/known to unknown	Whole to part
Teaching as transmitting	Teaching is facilitated
Learning as receiving	Learning as constructing or working strategy
Structured environment	Flexible, changing environment

Game-Based Learning does not replace teachers



# Game Design

# Types of Game-Based Activities

---

- Board or Card Games
- Outdoor Activities
- STEM Challenges
- Video and Electronic Tools
  - Simulations
  - Multiplayer
  - Strategy
  - Role Play
  - Adventure

*...life is a kind of Chess, in which we have often points to gain, and competitors or adversaries to contend with, and in which there is a vast variety of good and ill events ...By playing at Chess, then, we may learn foresight, circumspection, and caution.*

*Benjamin Franklin*

Implementing or developing a gaming activity or program does not need to be costly.

# Gaming Concepts

## Theme

The theme provides you with an overall focus or metaphor for your event or activity.



Environment



Clothing



Materials



Tools

# Gaming Concepts

## Elements

Provide immersion and excitement to give the player a sense of control and the freedom to succeed or fail.



Storyline



Characters



Objectives

# Gaming Concepts

## Mechanics

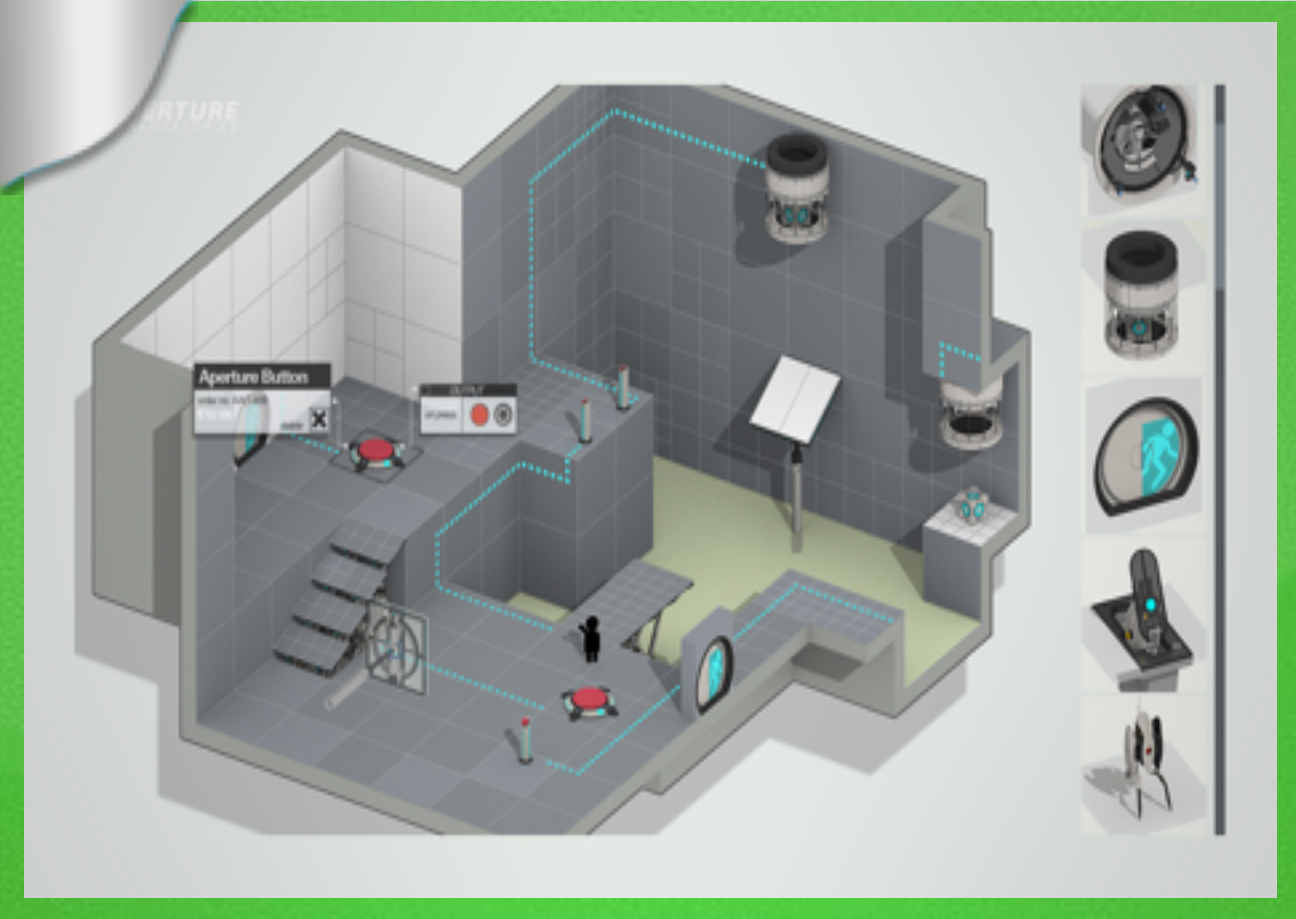
Rules, logic, and feedback that keeps the student playing.



Points & Bonuses



Challenges, Quests, Items



Levels & XP



Finish Line

# Lesson Planning

# Lesson Planning Basics

---

- Align with outcomes/objectives
- Provide a story, characters, and goals
- Provide short and long-term tasks with feedback (rewards) for correct behavior.
- Guide students toward goals
- Make it immersive

# Example Activity Plan

Activity Name			Lesson Name			Lesson #		
Life Size Angry Birds-Sports			Angry Birds			1		
Lesson Description:	In this activity, students will demonstrate forces of motion by utilizing a life size angry birds set. Students will construct an Angry Birds set using boxes created by ACE Crafts, a slingshot made of bungee cords and mesh, and lightweight balls. Students use the slingshot to knock down the "piggies" hidden in the boxes to receive points.							
Lesson Objective:	Utilize forces and motion to knock down the "piggies" in the Angry Birds set.							
Equipment & Supplies	<ul style="list-style-type: none"> <li>• Lots of boxes (painted like Angry Birds)</li> <li>• Bungee Cords</li> <li>• Balls</li> <li>• Whiteboard with Expo Markers</li> </ul>							
Room Preparation & Materials Setup	Have all materials in the gym. Set up the slingshot by attaching the ends to 2 poles.							
Intended Instructor:								
<input type="radio"/> Certified Teacher			<input type="radio"/> College Student					
<input type="radio"/> Para Professional			<input type="radio"/> Volunteer Specialty					

## ENGAGE | EXPLORE | EXPLAIN | ELABORATE | EVALUATE

Instructional Plan		Facilitation Tips:	
<p>Put the kids into groups of 4-5. Let the kids come up with team names and write them up on a white board. This is where you'll keep track of the kids points.</p> <p>Once the kids are put into teams, one of the teams will arrange the boxes any way that they want to. The boxes must be able to hold the "piggies". The other team will man the slingshot. Each team will get to slingshot 4-5 balls to try to knock down the "piggies". Use a variety of balls (dodgeball, playground balls, small balls, etc). Once everyone has a turn using the slingshot, they will now get a chance to throw the balls. Each child will get to throw one ball.</p> <p>Assign a point value for the "piggies" and for each one that gets knocked down, mark their points on the board. The team with the most points at the end wins. Have the kids keep track of their points and add them up at the end.</p>		<p>During the activity, talk about different forces and motion.</p> <p>What forces are acting on the balls?</p> <p>Do they have kinetic or potential energy?</p> <p>Why does the ball travel in a curved path?</p> <p>When is the ball traveling the fastest?</p> <p>Was it difficult to aim? Why or why not?</p> <p>How could we make it easier to hit the balls?</p>	

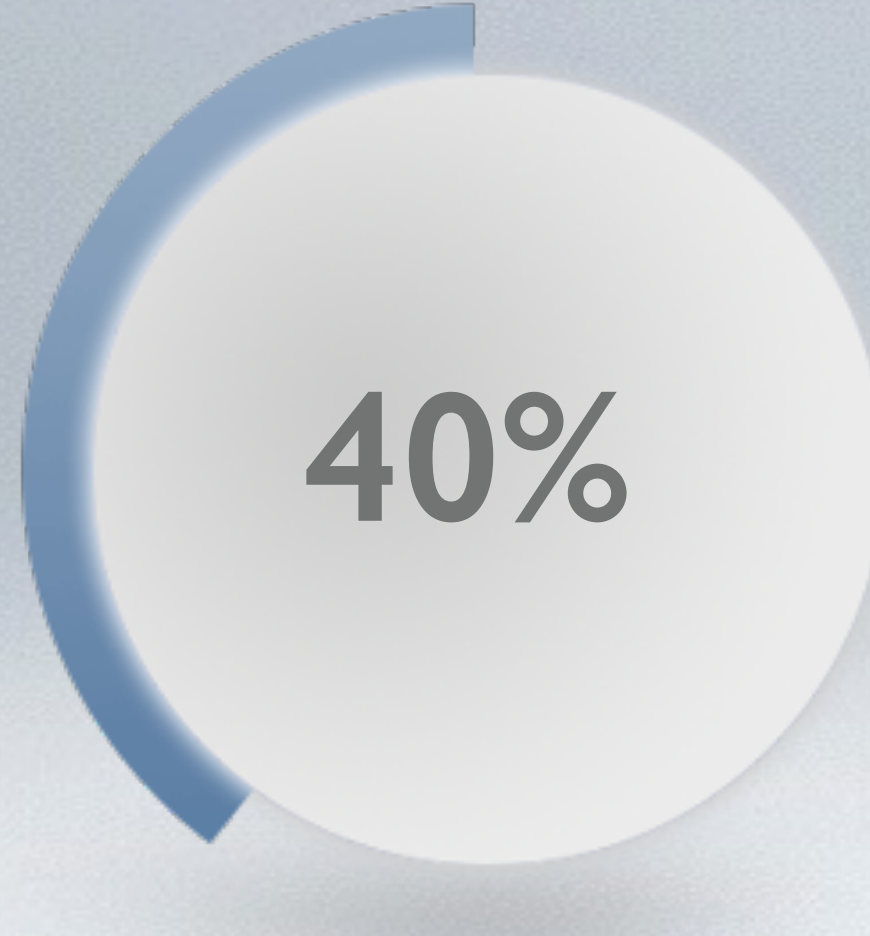


# Evidence and Trends

K-8th Teachers  
Twice A Week



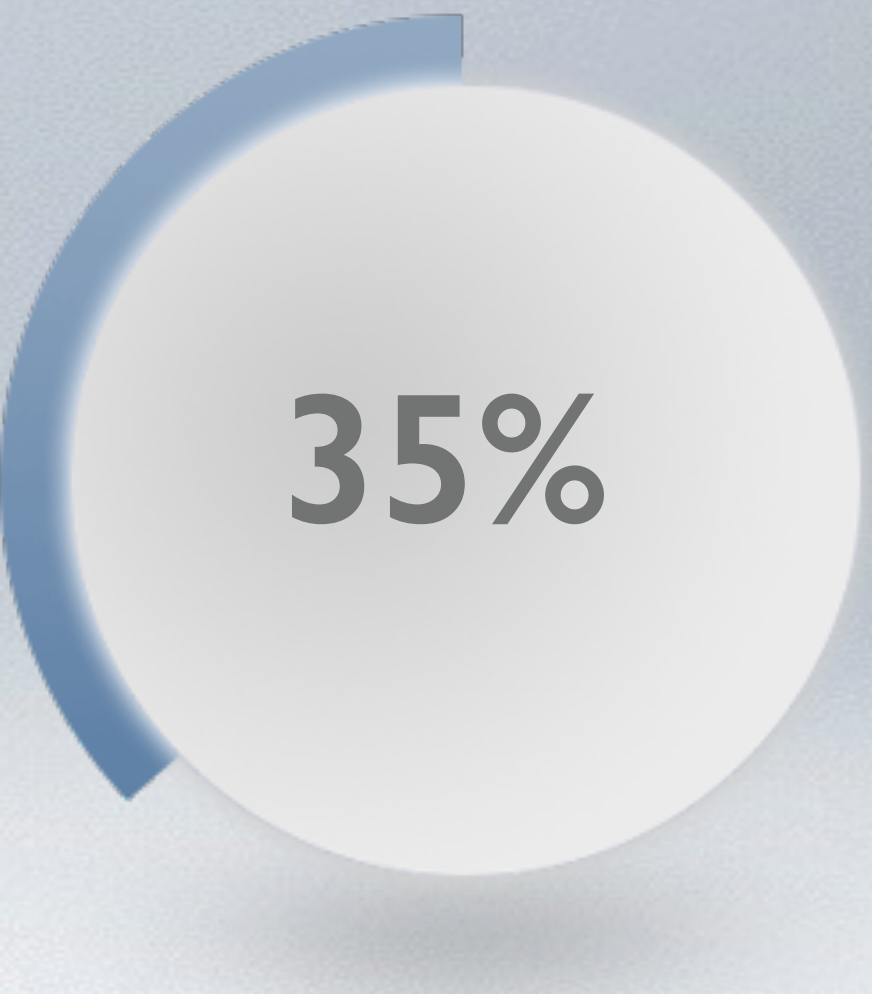
Interactive  
Whiteboards



Reading  
Intervention



Math  
Intervention



Engages  
Lower-Performers



# Evidence and Trends

## Business & Technology

Average Assessment Scores

Without Game

With Game



## Economics

Average Standardized Test Scores

Without Game

With Game



# **Game Development Activity**

# Tools You Can Use

---



- Scratch - MIT Media Lab
- Construct - Scirra
- GameMaker - YoYo Games
- Game Editor - Makslane Rodrigues
- Kodu Game Lab - Microsoft
- Alice - Carnegie Mellon University
- Portal 2 - Valve
- Thinking Worlds - Caspian Learning

# Resources You Can Use

---

## Resources

Pre-designed games you can use in the classroom.

- [Slower Speed of Light](#) - MIT Media Lab
- [Illogical Journey of Orez](#) - Gambit Game Lab
- [Portals 2](#) - Valve Software, Learn With Portals
- [FunBrain](#) - Math and Reading
- [GameStar Mechanic](#) - Learn game creation
- [BrainPop](#) - Science, English, Math, Social Studies, Health
- [Edutopia](#) - K-12 Innovative learning site
- [This Presentation & Resources](#)

# **Gaming in Texas Afterschool**

# Minecraft - CIS Brazoria County

## Overview

Allows students to explore math, science, social studies, and reading through the game.



Read & Recreate



Measurement and Perimeters



Science - Habitats & Organisms



Arts - Create

# Math CGI - NYOS Austin

## Overview

SMART board, computer, CGI, academic math games training.





# Angry Birds - Greenville ISD

## Overview

Students demonstrate forces of motion by utilizing a life size angry birds set



Design



Construct



Test

# Questions & Answers

# Closing

---

## Session

### Intentional Gamer

- Game-Based Learning
- Game Design
- Lesson Planning
- Game Development
- Gaming in Afterschool
- Q&A

# The Intentional Gamer

**Gerard 'Gerry' C. Petereit**  
**Technical Assistant**  
**Senior Instructional Designer**  
**Edvance Research, Inc.**  
**[gpetereit@edvanceresearch.com](mailto:gpetereit@edvanceresearch.com)**