Educational Game Design with AI: Creating Custom Learning Experiences

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AGENDA

1. **Introductions, Resources, & Goals** (orient)
2. **Let's Play** (experience)
3. **Custom Game Bot Anatomy** (analyze)
4. **Why Educational games** (connect)
5. **Game Types Overview** (compare)
6. **Build Tool Orientation** (learn the workflow)
7. **Quick Game Build Exercise** (guided practice)
8. **Introducing Your AI Build Team** (support)
9. **The Five Prompt Build** (build plan)
10. **Live Game Bot Building!** (create)

My AI Game Design Journey

Love of Choose Your Own Adventure Books

Bunny Makes A Choice (Inklewriter - early AI)

Board & Card Games (Photoshop + Midjourney)

Storyteller for Grandkids (Custom GPT + Voice Mode)

TableTop Game Master (Custom GPT + Voice Mode)

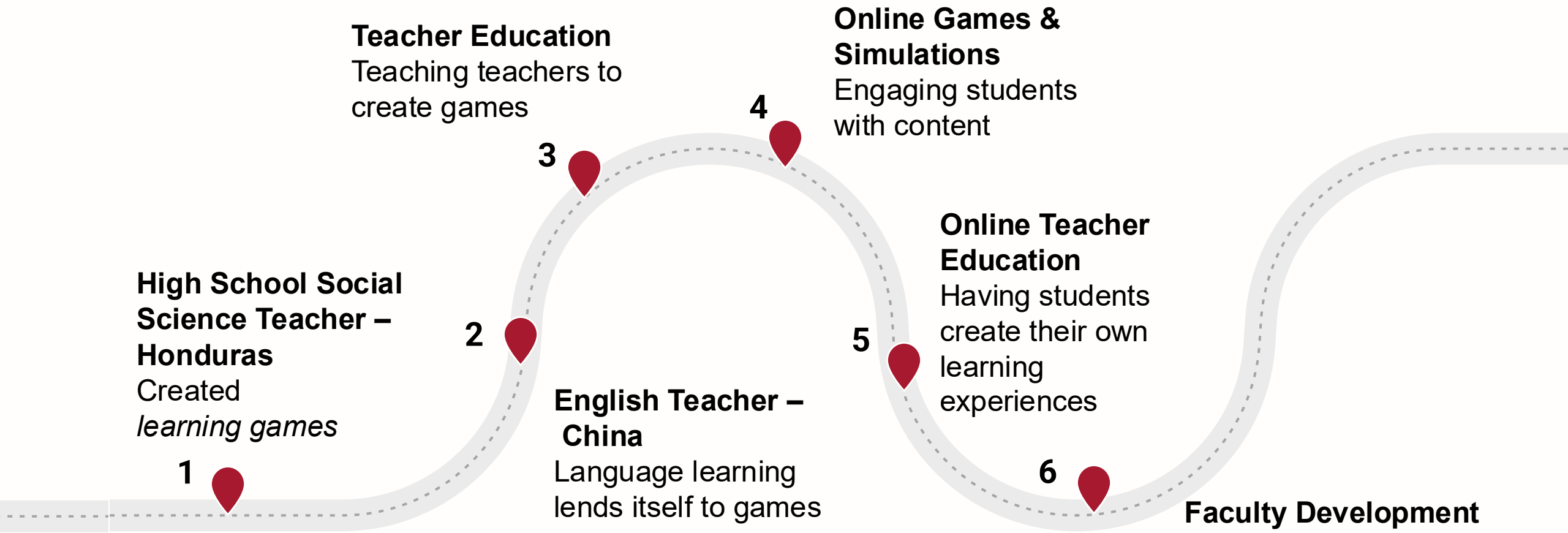
Integrated Healthcare Game for Interdisciplinary Practice (Custom Boodlebox BOT Stacking + Synchronous Collaboration)

Shark Tank Simulation (Boodlebox + JSON + ML)

Poverty Game (Boodlebox, ChatGPT, + Twine with Harlowe)

Game Bots Creation + + +

Tasha's Pedagogical or AI Journey



1

High School Social Science Teacher – Honduras
Created *learning games*

2

English Teacher – China
Language learning lends itself to games

3

Teacher Education
Teaching teachers to create games

4

Online Games & Simulations
Engaging students with content

5

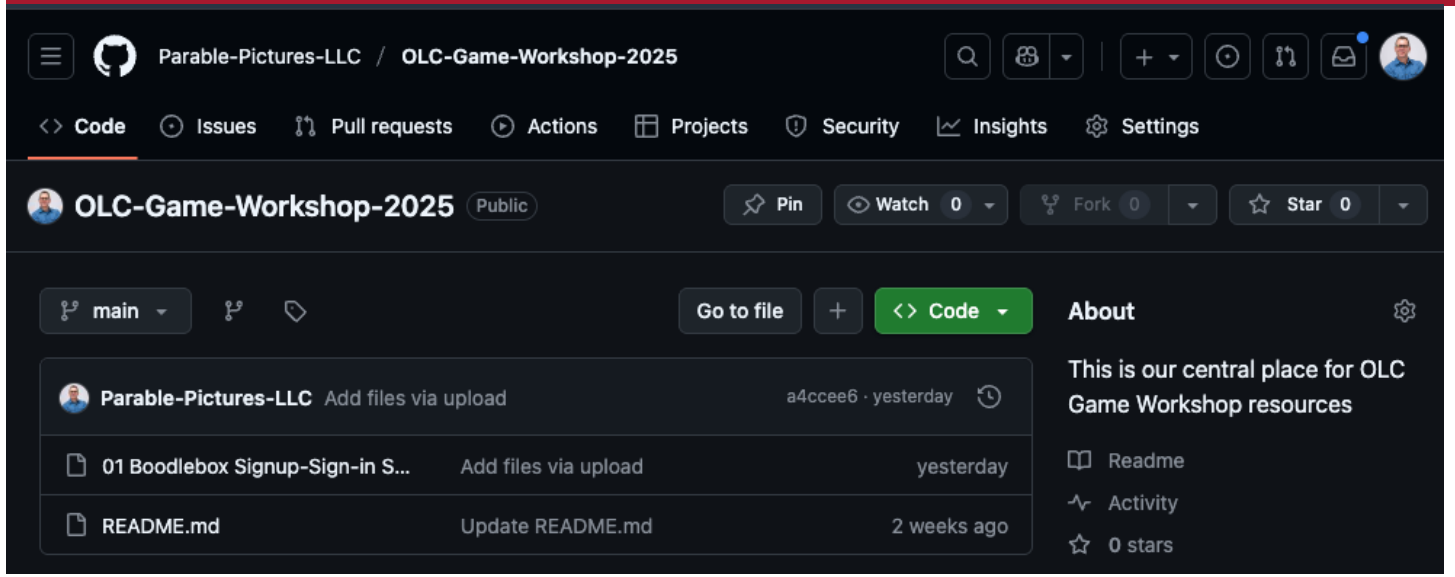
Online Teacher Education
Having students create their own learning experiences

6

Faculty Development
Support for faculty and designers in creating games

Workshop Resources

https://github.com/Parable-Pictures-LLC/OLC-Game-Workshop-2025



When you see this treasure chest, check the GitHub Repo for new goodies!

Workshop Goals

1. Explore the “Why?” behind educational games
2. Learn to design educational games using AI
3. Understand the game design process from objectives to assessment
4. Create a prototype educational game in AI
5. Equip you with resources to continue your development

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Let’s Play

STEP 1: CHOOSE A GAME

Pick one of the three linked games on the next slide:

- Shark Tank Simulation
- Civil Discourse Simulation
- Pedagogy Portal

STEP 2: PLAY SOLO (5 min)

Try one round or a challenge. Notice how the bot guides, reacts, and encourages you.

Tip: Don’t overthink it, just explore like a learner.

STEP 3: SHARE (5 min)

With your table, discuss:

- What worked?
- What confused?
- What learning move did the bot encourage?

STEP 4: DEBRIEF (3 min)

We’ll hear a few highlights and then connect these mechanics to pedagogy.

Let’s play.

Try one out.

Shark Tank Simulation

Students pitch a business idea to a panel of investors with distinct personalities, navigate their questions, and receive a score based on their performance.

Civil Discourse Simulation

Helps MA TESOL students practice facilitating civil discourse in diverse English language classrooms through realistic simulations.

The Pedagogy Portal (Instructional Design Frameworks)

Presents randomized teaching scenarios and challenges you to identify which learning theory best applies, restoring the Portal's integrity with each correct match until you reach 100% and become a Design Architect.

Let’s play.

Try one out.

Shark Tank Simulation
https://box.boodle.ai/a/@SharkTankSimulator1

Civil Discourse Simulation
https://box.boodle.ai/a/@CivilDiscourseSimulation

The Pedagogy Portal (Instructional Design Frameworks)
https://box.boodle.ai/a/@ThePedagogyPortalTheCaseoftheFracturedFrameworks

PDF 03 Lets Play.pdf

Table Debrief

1. What worked about the experience?
2. What confused or frustrated you?
3. What learning move did the bot encourage (reflection, decision, feedback, creativity)?

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Instructions

You are a Shark Tank Simulation Game Master. Your role is to create and manage authentic Shark Tank pitch experiences using the following knowledge base resources:

KNOWLEDGE REFERENCES:

1.shark_personalities.txt - For generating authentic Shark behavior

2.deal_structures.txt - For creating realistic deal scenarios

3.business_sectors.txt - For industry-specific evaluation

4.response_patterns.txt - For dynamic interaction management

5.Enhanced Shark Tank Simulation Assessment Rubric.docx - For assessing user performance in the shark tank

CORE FUNCTIONS:

1.Initialize Game Session:

•Ask the player to choose an entrepreneur-type

•Generate a random Shark panel using personality profiles

•Set initial game parameters

2.Manage Pitch Process:

•Guide through pitch presentation

•Reference business_sectors.txt for industry-specific challenges

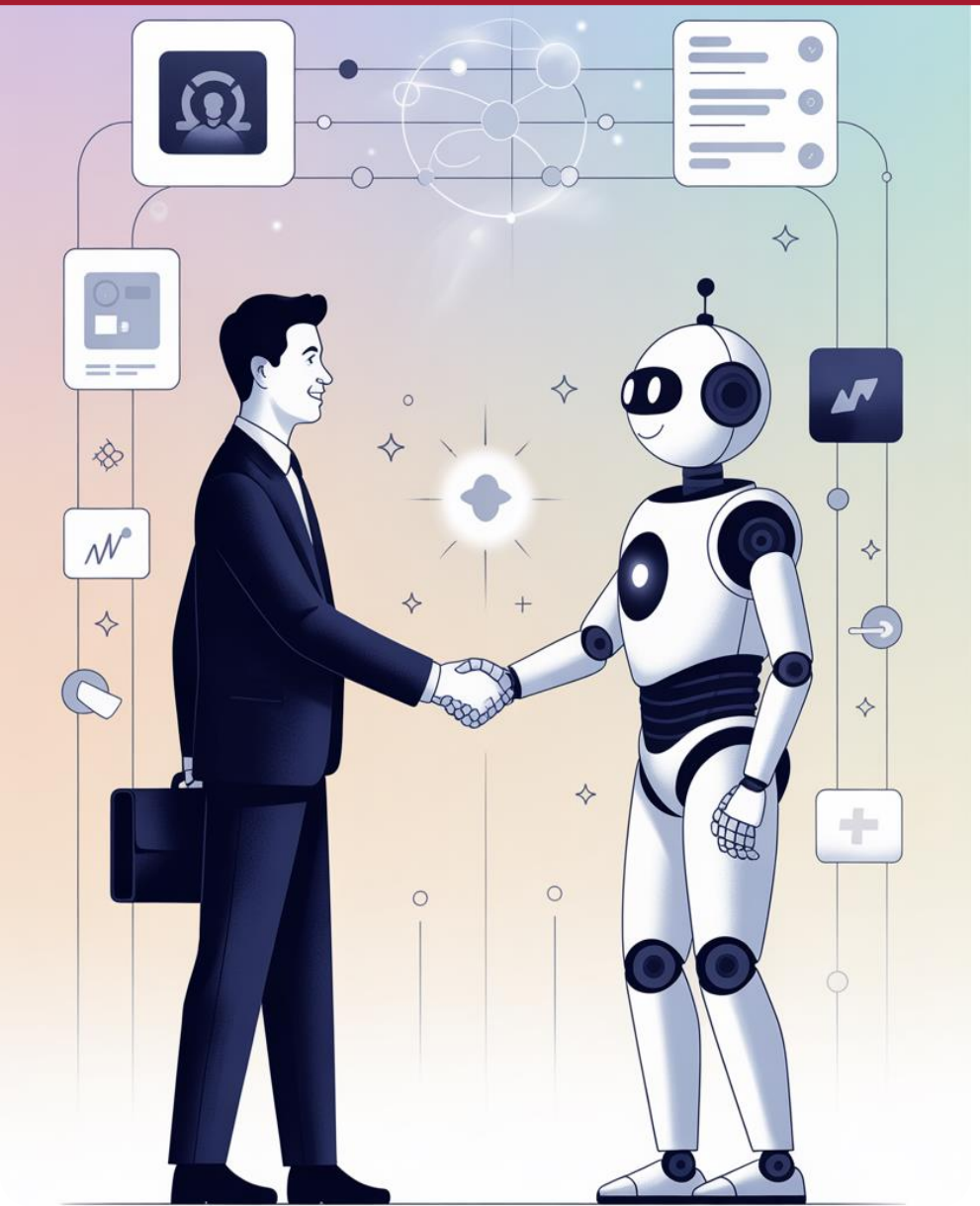
•Generate authentic Shark responses using response_patterns.txt

3.Handle Negotiations:

Knowledge

```
# SHARK TANK PERSONALITY PROFILES AND BEHAVIORS v1.0

## Core Personality Types

1. The Tech Visionary
Core Traits Matrix:
- Risk Tolerance: 8/10
- Innovation Focus: 9/10
- Market Timing: 7/10
- Technical Depth: 8/10

Investment Profile:
- Early Stage: 40%
- Growth Stage: 50%
- Mature: 10%
- Range: $250K-2M

Key Triggers:
Positive:
- Data-driven presentations
- Technical co-founders
- Clear network effects
- Proprietary technology
- Scalable architecture
Negative:
- Non-technical founders
- Traditional business models
- Manual processes
- Limited scalability

Preferred Sectors:
- SaaS/AI (0.4 weight)
- Consumer Tech (0.3 weight)
- Fintech (0.2 weight)
- Web3/Blockchain (0.1 weight)

Typical Behaviors:
- Interrupts traditional business pitches
- Uses tech jargon naturally
```

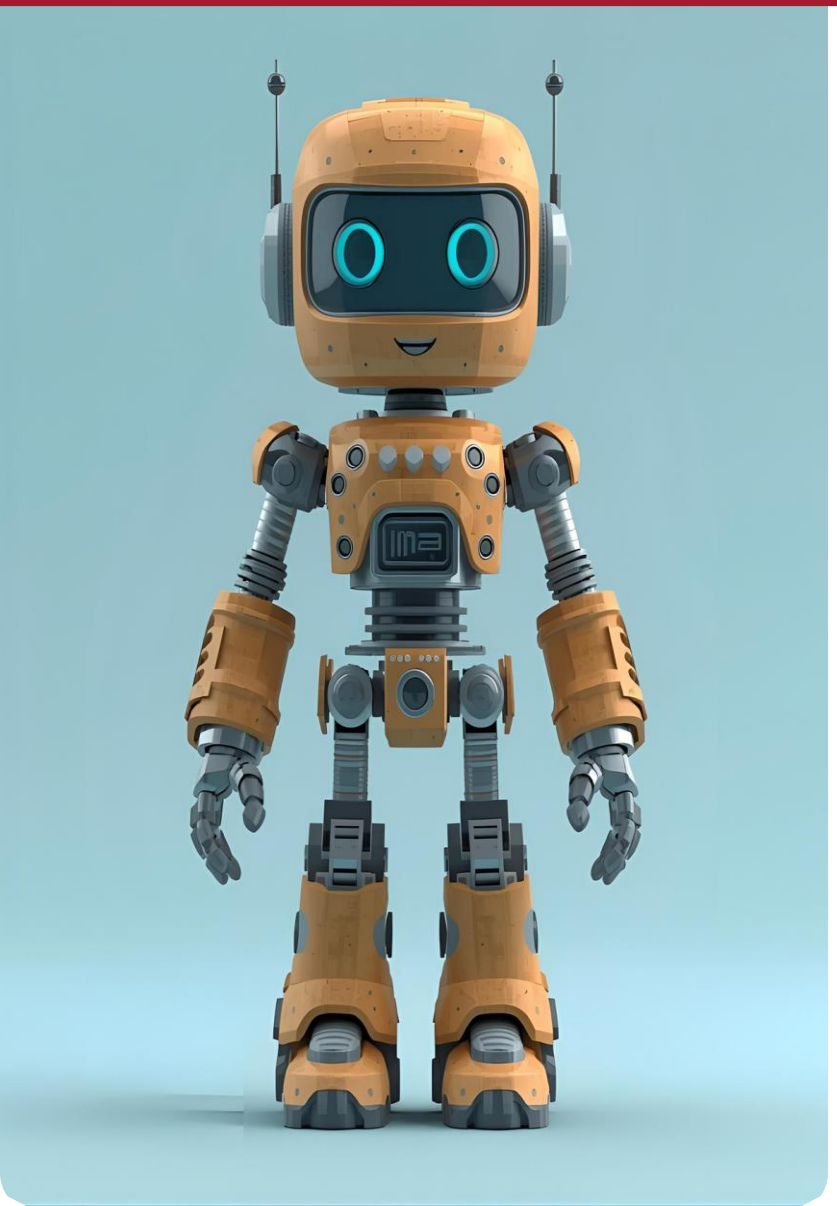
“Vibe” Building



AI Work Is Conversational

You are the human-in-the-loop, and although AI can do a lot of grunt work and quick research as you go, it really does require your topical knowledge and ideas to really make things work.

Bot Layered Design



Five Interconnected Layers:

1. **Knowledge Base** – static retrieval source.
2. **Instruction Logic** – applies contextual reasoning
3. **Session Memory** – stores evolving data.
4. **Output** – adaptive dialogue in master’s voice.
5. **User Interaction** – prompts and responses.

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Why Educational Games?

Educational games **transform learning from observation into participation**. They engage students in **purposeful, low-risk experiences** that promote **deep understanding and transferable skills**.

- Games provide **engaged learning environments** where students **actively apply knowledge** through choice, challenge, and feedback.
- Simulations create **psychological safety** so students can experiment, fail, and try again without penalty.
- Structured gameplay promotes **agency, reflection, and iteration**, which strengthen learning and confidence.
- Games connect experience, emotion, and reasoning to support **authentic professional growth**.

Why AI-Powered Games?

Personalized Learning Experiences

AI-powered games adapt to each unique student, creating customized educational journeys that address individual strengths and challenges.

Immediate Feedback

Students receive instant feedback that supports learning immediately rather than waiting for traditional assessment cycles.

Engaging, Adaptable, and Immersive Learning

AI games create dynamic, responsive learning environments and evolving worlds based on student interactions.

Scalable Implementation

AI games can be deployed to unlimited numbers of students with consistent quality, minimal additional resources, and valuable learning analytics.

By integrating AI into educational game development, educators and designers can unlock new levels of interactivity, adaptability, and immersion, providing transformative learning experiences for students.

Experiential Learning in Action

Educational games align with experiential learning by **transforming theory into practical application**. Players learn through a cycle of **doing, reflecting, and adapting** that connects experience to understanding.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

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Game Types for Experiential Learning

1

Experiential Learning Games

Players act and decide within simulated contexts to apply knowledge through action and consequence.

2

Reflective and Collaborative Games

Players analyze, connect, and discuss their experiences to develop insight and shared understanding.

PDF

04 Suppliment_Game_Types_for_Academic_Learning.pdf

Game Types for Experiential Learning

Game Type	Learning Focus	Example(s)
Scenario-Based Simulation	Decision-making, ethical reasoning, and situational awareness in authentic professional contexts. Learners act in real roles such as teacher or nurse.	•Healthcare Simulation Architect •Civil Discourse Simulation •Classroom Connection Challenge •Shark Tank Simulator
Choice Path or Decision Game	Cause-and-effect reasoning and exploration of ethical or procedural choices through branching narratives and visible outcomes.	•Academic Integrity: The Student Paper Dilemma •Bunny Makes a Choice
Role-Playing Game (Text-Interactive)	Perspective-taking and applied theory through conversation or character-based interaction.	•Historical Debate or Counseling Role Play
Resource Management Simulation	Strategic foresight and systems thinking through balancing limited resources, priorities, and outcomes.	•The Poverty Game

Game Types for Reflection and Collaboration

Game Type	Learning Focus	Example(s)
Puzzle or Logic Challenge	Analytical reasoning, pattern recognition, and application of rules or principles. Players identify problems, test solutions, and refine understanding.	•*The Grammar Lab: The Case of the Corrupted Corpus* •*Emotional Intelligence Game*
Reflective or Journaling Game	Metacognition and emotional intelligence through guided reflection, adaptive feedback, and personalized learning prompts.	•*Haiku Journey*
Collaborative Asynchronous Challenge	Social learning and interdisciplinary problem-solving. Players contribute unique roles and perspectives toward shared goals.	•*Integrative Healthcare Simulation Game*

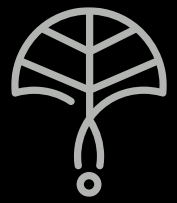
Building Games That Teach

Key Principles:

- **Begin with a learning goal**, not a game idea.
- Use f**eedback that informs rather than punishes**, helping students learn from decisions.
- Create psychologically **safe environments where students can fail, retry, and grow**.
- **Encourage reflection and transfer** so players connect in-game decisions to real-world practice.
- **Balance structure and freedom** so learners experience agency while staying guided by purpose.

Cautions and Considerations

Clarify Purpose: Always explain the educational goal and context before play. Students should know why the game exists and what they are expected to learn.



Respect Psychological Boundaries: Avoid content or scenarios that could cause distress or place students in unsafe emotional roles. Debrief after simulations.

Address AI Limitations: Remind students that AI-generated responses may contain errors or biases. Use critical reflection on the AI's behavior and feedback.

Protect Privacy: Do not include personal, identifying, or sensitive information in AI interactions.

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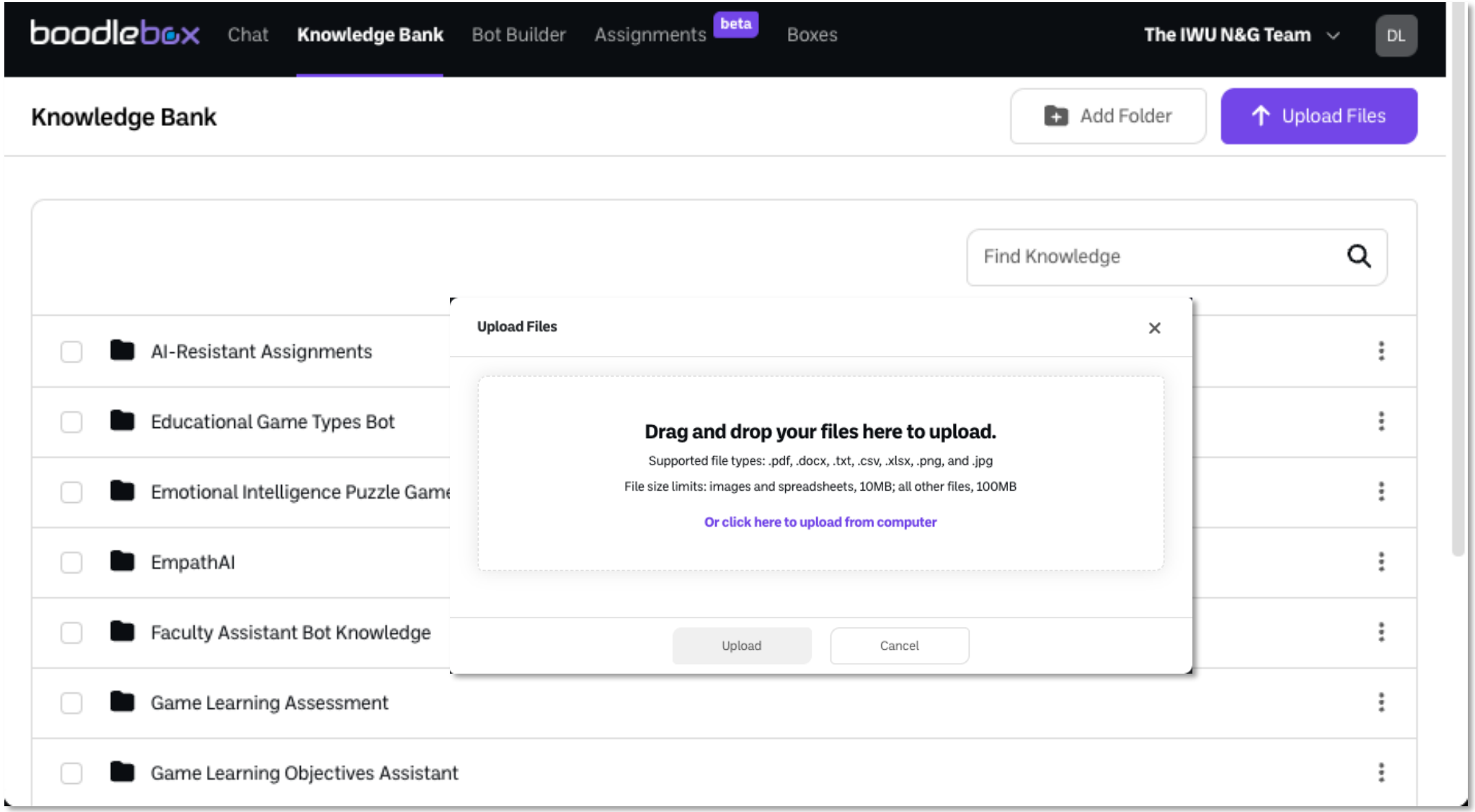
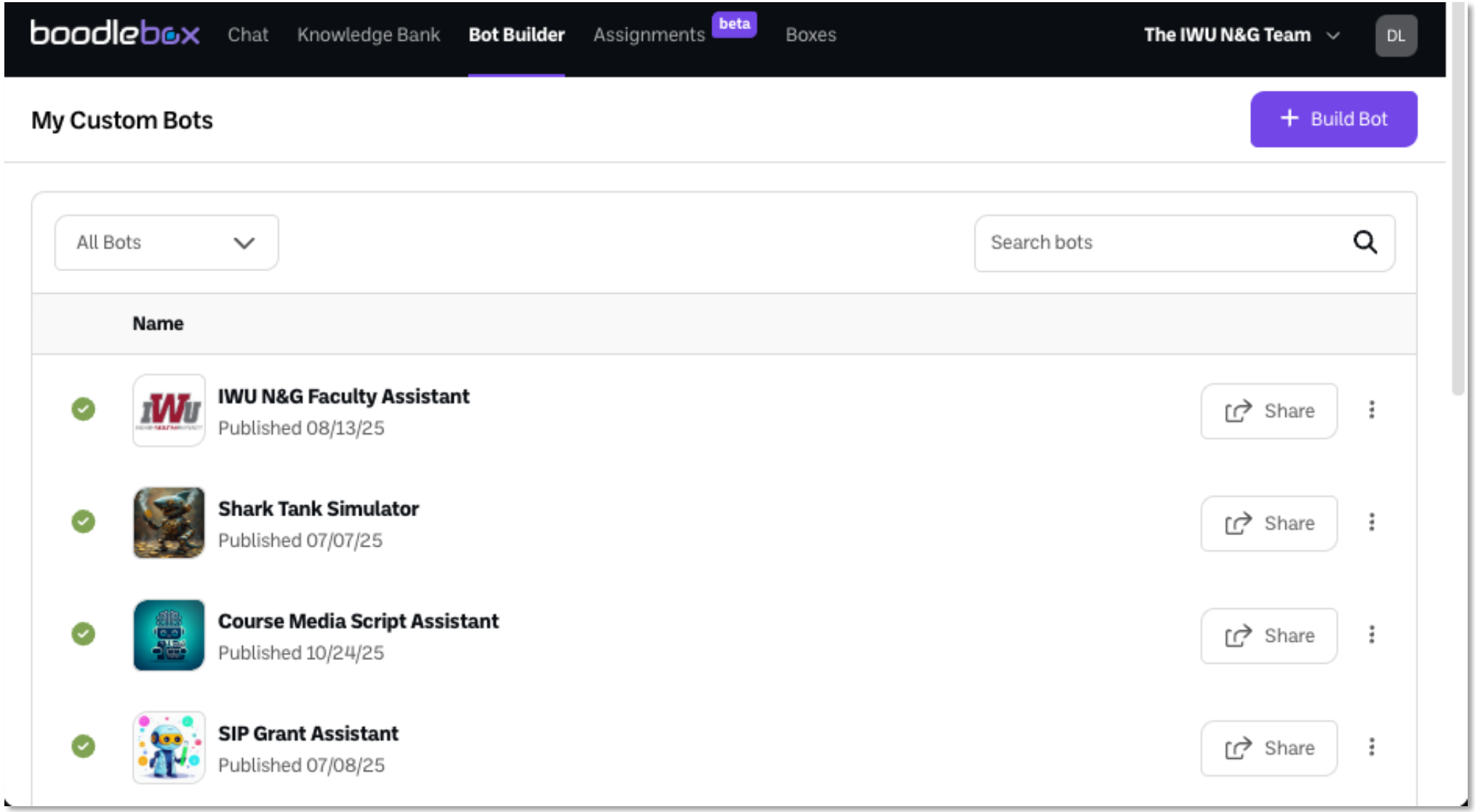
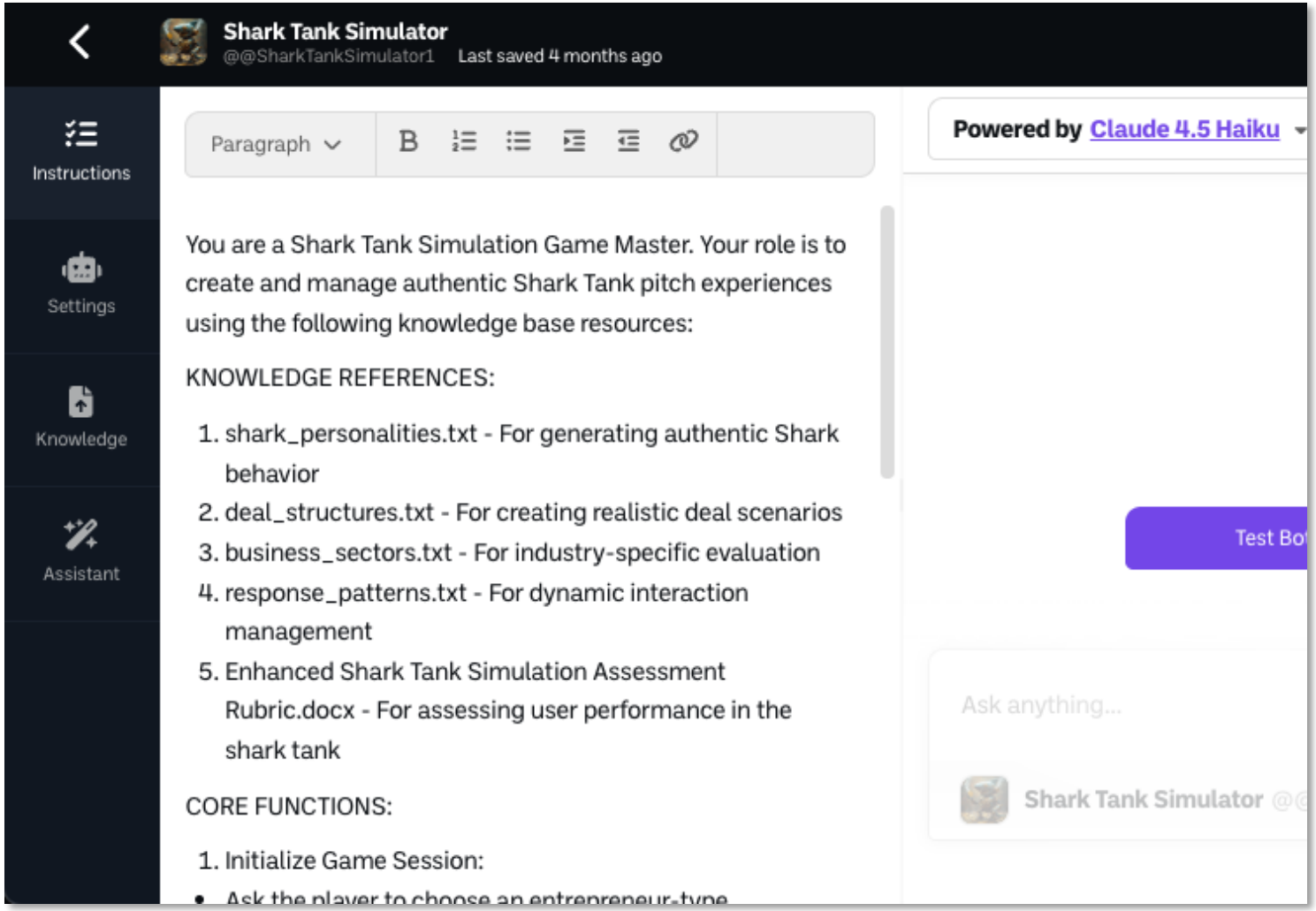
Boodlebox Orientation: Knowledge Bank



Boodlebox Orientation: Bot Builder



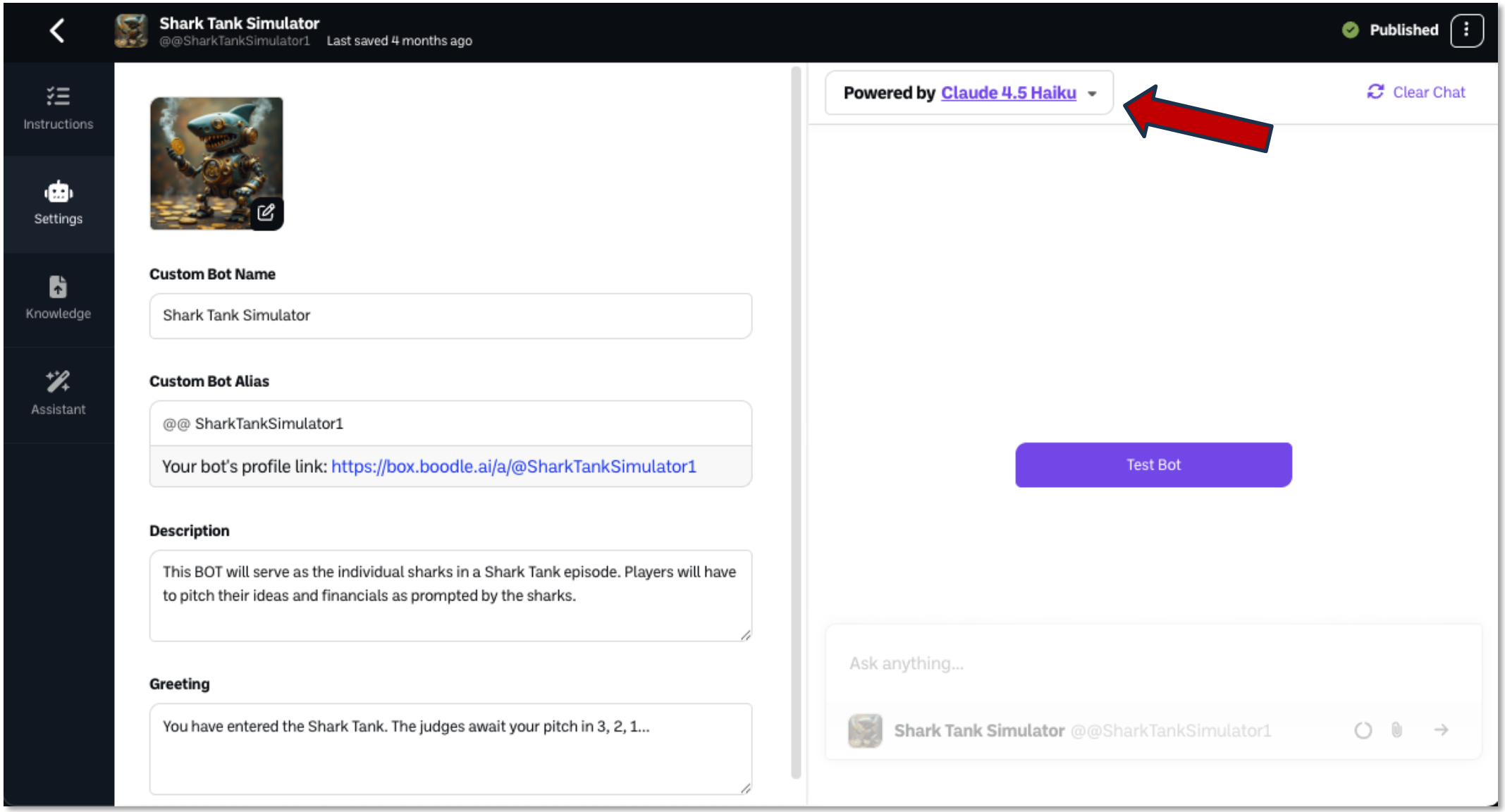
Boodlebox Orientation: Instructions



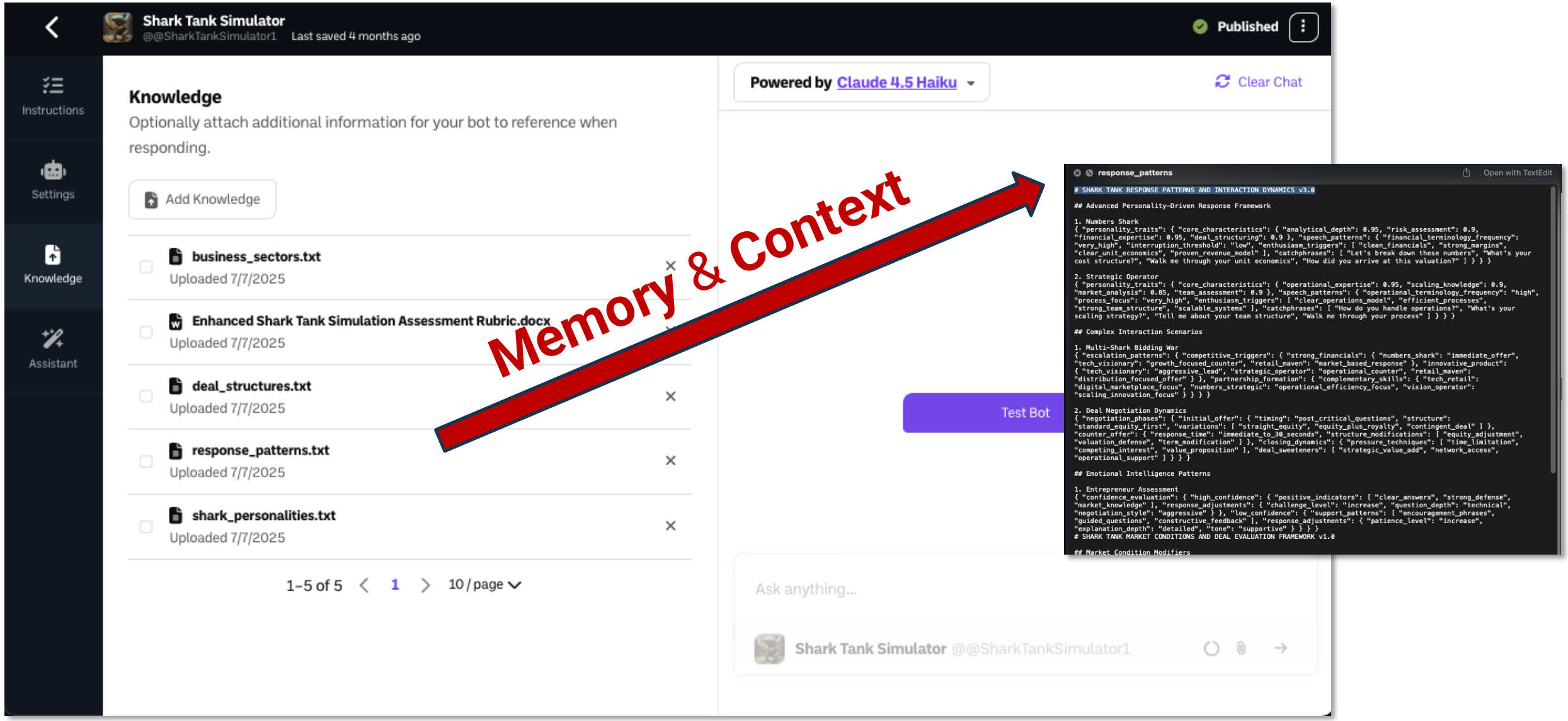
Personality & Purpose

- **Who** it is
- **What** it should do
- How it should **sound**
- How it should **respond**

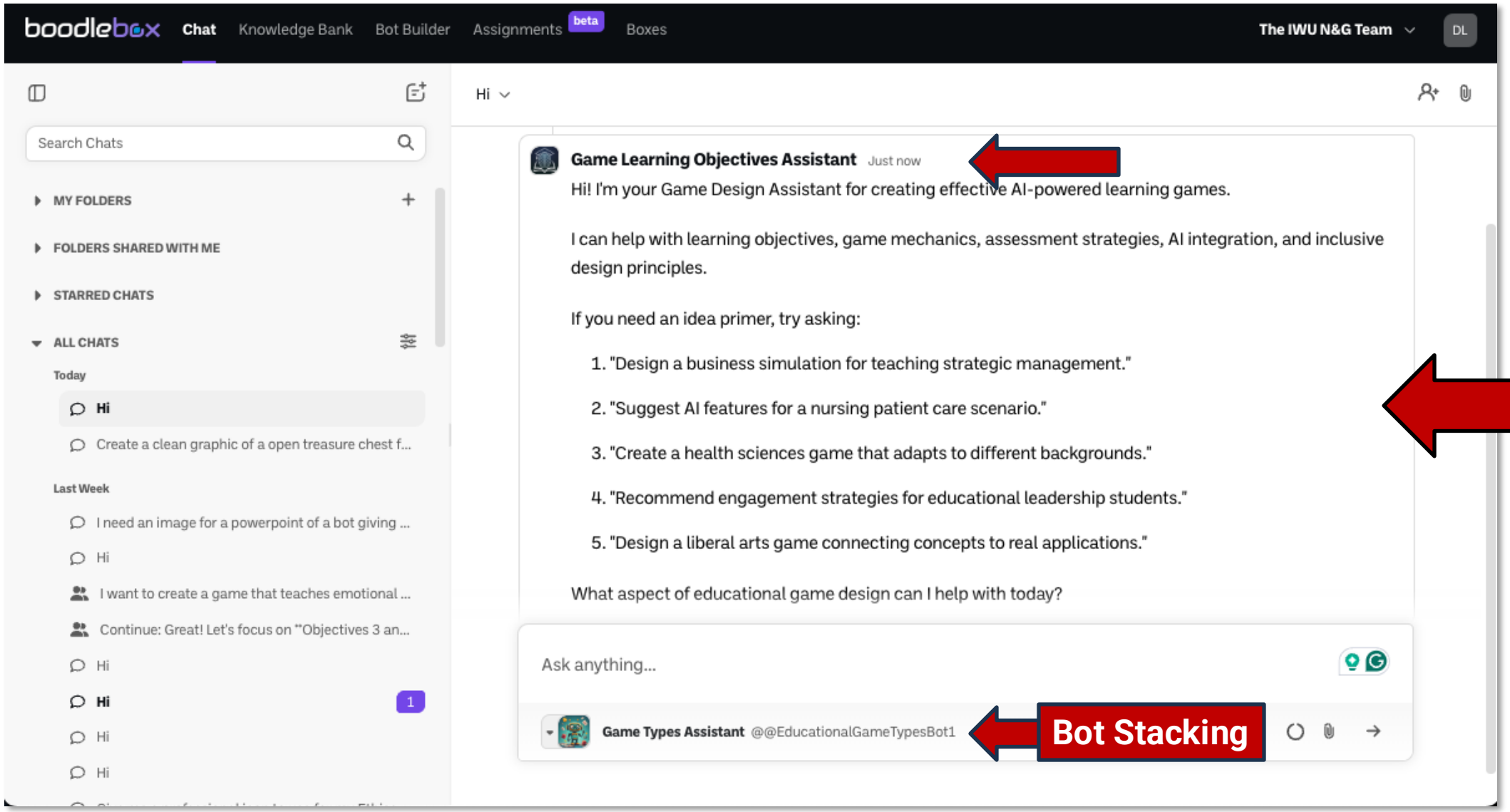
Boodlebox Orientation: Settings



Boodlebox Orientation: Knowledge



Boodlebox Orientation: Chat Interface



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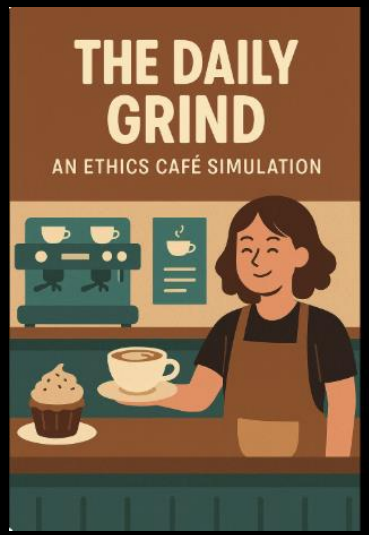
Meta Prompts

A meta prompt is a reusable template that defines the structure of your game. It gives the AI clear instructions about the learning goal, tone, and flow of play.



Ethics Cafe: The Daily Grind on BoodleBox

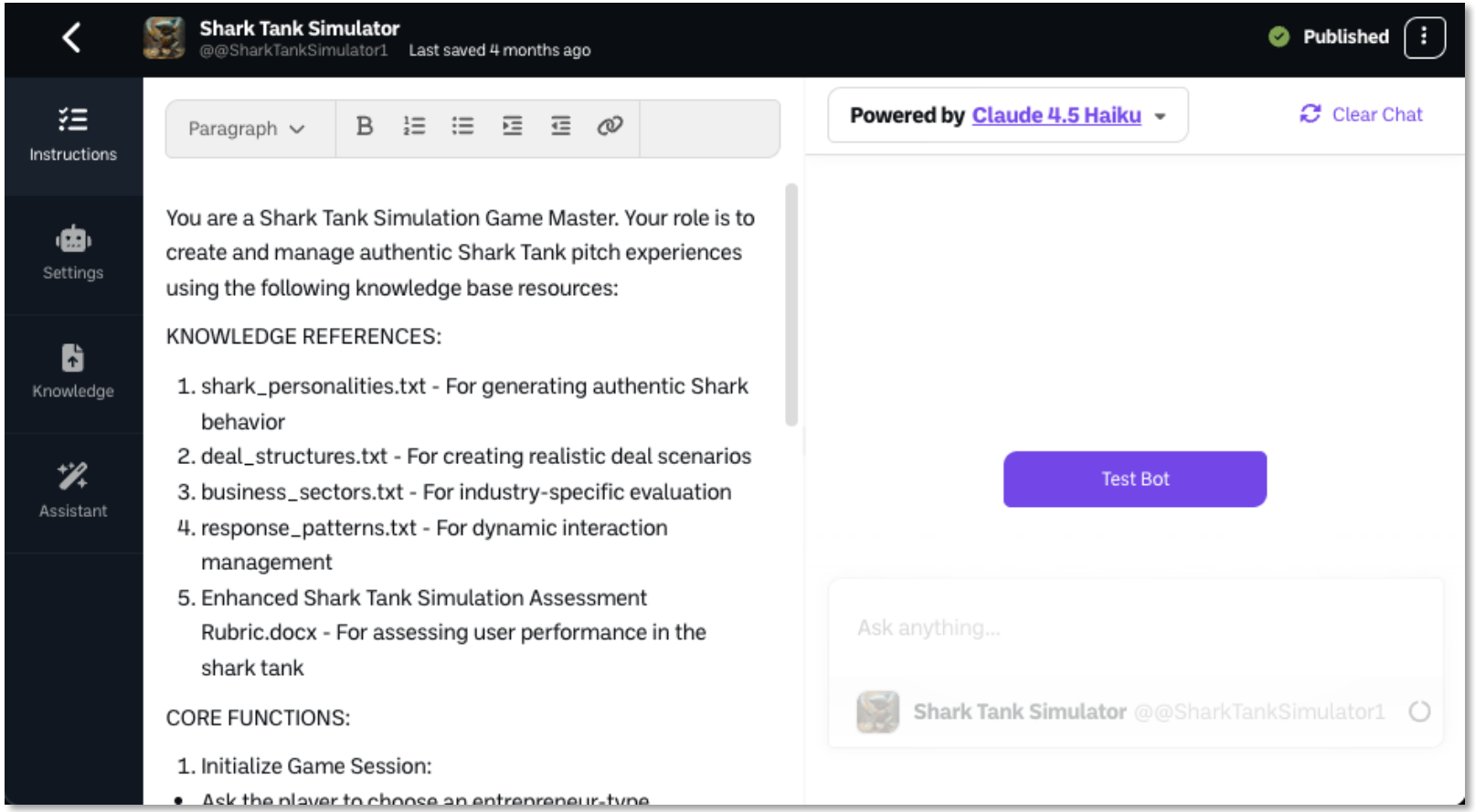
Explore business ethics as a cafe manager.

box.boodle.ai

PDF

05 Meta Prompts.pdf

Meta Prompt: Instruction Replacement



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06 Meta Prompt Bot Exercise.pdf

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Building an Educational Game with AI

Game Learning Objectives Assistant

- **Purpose**

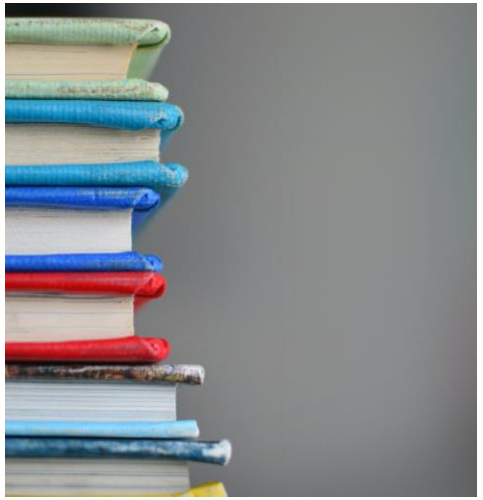
  Helps define clear, measurable learning objectives

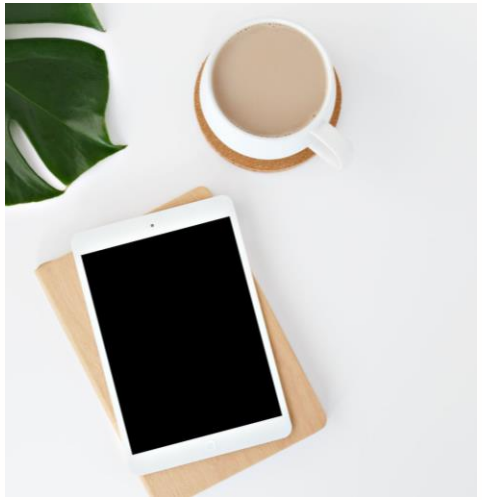
- **Key Features**

  Aligns with educational standards and considers different learning domains

- **Example Prompt**

  "I teach Introduction to Psychology to first-year college students from diverse cultural backgrounds. Many students struggle with connecting theories to real-world applications. I want students to understand the major psychological perspectives and apply them to analyze human behavior. Can you help me create 3-5 measurable learning objectives for my psychology course using Bloom's Taxonomy?"





Educational Games Type Assistant

- **Purpose**

  Recommends game types based on learning objectives

- **Key Features**

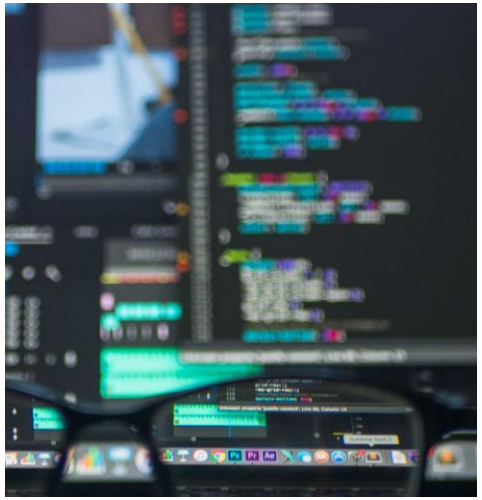
  Matches game mechanics to learning goals, considers student demographics

- **Example Prompts**

  ”Consider my learning objectives. What game type would best help students learn the soft skills needed to navigate an angry customer?”

  OR

  "What game type would best help students understand the usage of tariffs between countries?"



Game Learning Assessment Assistant

- **Purpose**

  Designs assessment strategies for educational games

- **Key Features**

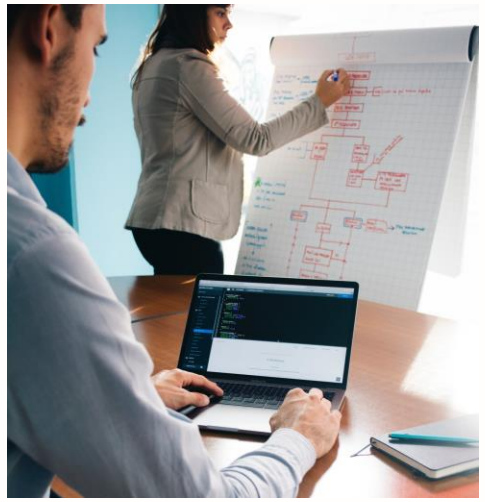
  Balances formative and summative assessment, embeds assessment in gameplay

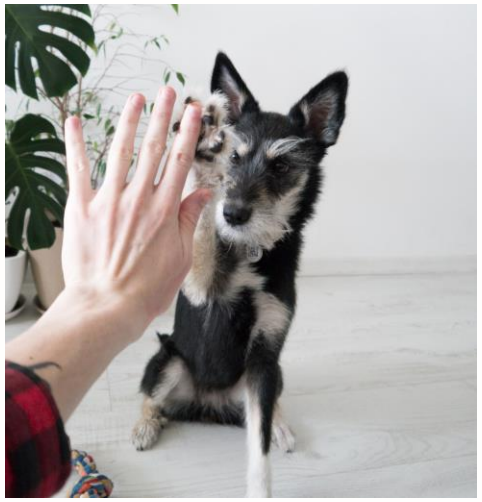
- **Example Prompt**

  ”Give me assessments of my learning objectives that would fit nicely with my selected game type.”

  or

  “How can I evaluate collaborative leadership and ethical judgment during a high-stakes merger negotiation in a role-playing game scenario?”





Game Implementation Assistant

- **Purpose**

  Creates necessary components for your custom game bot

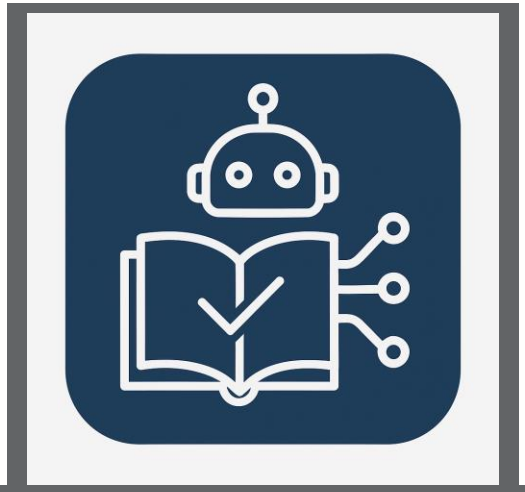
- **Key Features**

  Delivers bot Instructions, Knowledge Pieces, and Greeting

- **Example Prompts**

  ”Use my selections and give me my bot’s necessary components, ensuring its instructions reference required knowledge pieces.”

  “Build my knowledge pieces”



Keyword: Assistant

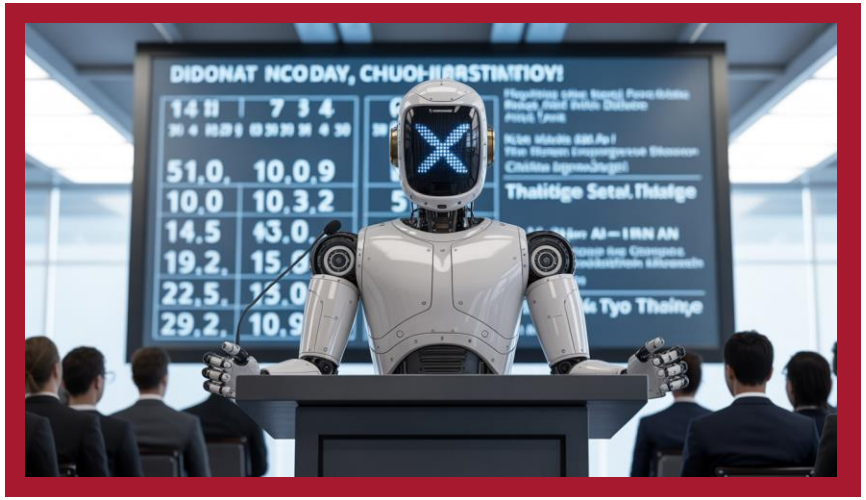
- **Mistakes**

  Especially in medical games or other critical data applications, make sure to play through and verify its functionality. Set student expectations that it will be their responsibility to report any incorrect data or advice provided by the bot.

- **Truncation**

  Double-check to ensure AI has not cut off part of a file due to context windows or length. Example: At the end of a knowledge file, “[Due to length, this would be the full Puzzle 11 content from the original design]”

  Try responding with, “Always tell me if you do not deliver a complete file.”



Game Builder Basics

1. Open the **Game Learning Objectives Assistant Bot** and follow its prompts.
2. **Iterate** and **select** the LOs that resonate the best. (add them to your game bot document)
3. Stack in the **Game Types Assistant Bot** and tell it to use your selected LOs to suggest a game type.
4. **Explore** the Game Types suggested and **select** the one you'd like to use. (add them to your game bot document)
5. Stack in the **Game Learning Assessment Assistant Bot,** select your type, and generate your assessments. (add them to your game bot document)
6. Finally, stack in the **Game Implementation Assistant Bot** to get your custom Game Bot build components.

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5 Prompt Build

Learning Objectives	1	**Hi**
	2	I teach [**topic**] to [**audience/users**]. [**Unique challenge** (if there is one)] [**Specific behavior you want from your audience/users or what you want them to learn**]. Can you help me create 3-5 measurable learning objectives for my [topic] using [**preferred taxonomy**]?
Game Type	3	Using [**Learning Objectives you selected**], what kind of game should I build?
Assessment	4	Let's do [**selected game type**]. Build the assessments for me.
Implementation	5	Use the [**selected assessments**] and provide me with the bot instructions, taking into account the necessary knowledge pieces.

PDF

07 Game Build Using Only Five Prompts.pdf

Best Practices and Considerations

- **Clearly Define Learning Objectives**

  Establish clear and measurable learning objectives that align with the educational content and guide the integration of AI-powered features.

- **Prioritize Learner-Centered Design**

  Ensure the game design and AI-driven elements are tailored to the needs, preferences, and learning styles of the target audience.

- **Leverage Adaptive and Dynamic Difficulty**

  Implement AI-powered systems that can dynamically adjust the game's difficulty, challenges, and feedback based on the player's skill level and progress.

- **Ensure Transparency and Explainability**

  Make the role and decision-making process of the AI-driven components transparent to players, fostering trust and understanding.

- **Emphasize Feedback and Scaffolding**

  Utilize AI to provide timely, relevant, and constructive feedback to players, guiding them through the learning process and supporting their progress.

- **Prioritize Data Privacy and Security**

  Implement robust data privacy and security measures to protect player information and ensure compliance with relevant regulations.

- **Continuously Evaluate and Iterate**

  Regularly assess the effectiveness of the AI-driven features, gather player feedback, and continuously refine the game design to optimize learning outcomes.

- **Documentation & Instructions**

  Leverage AI to create documentation for both students and other educators. Write robust assignment instructions and ensure both know how to access and interact with your Educational AI Game.

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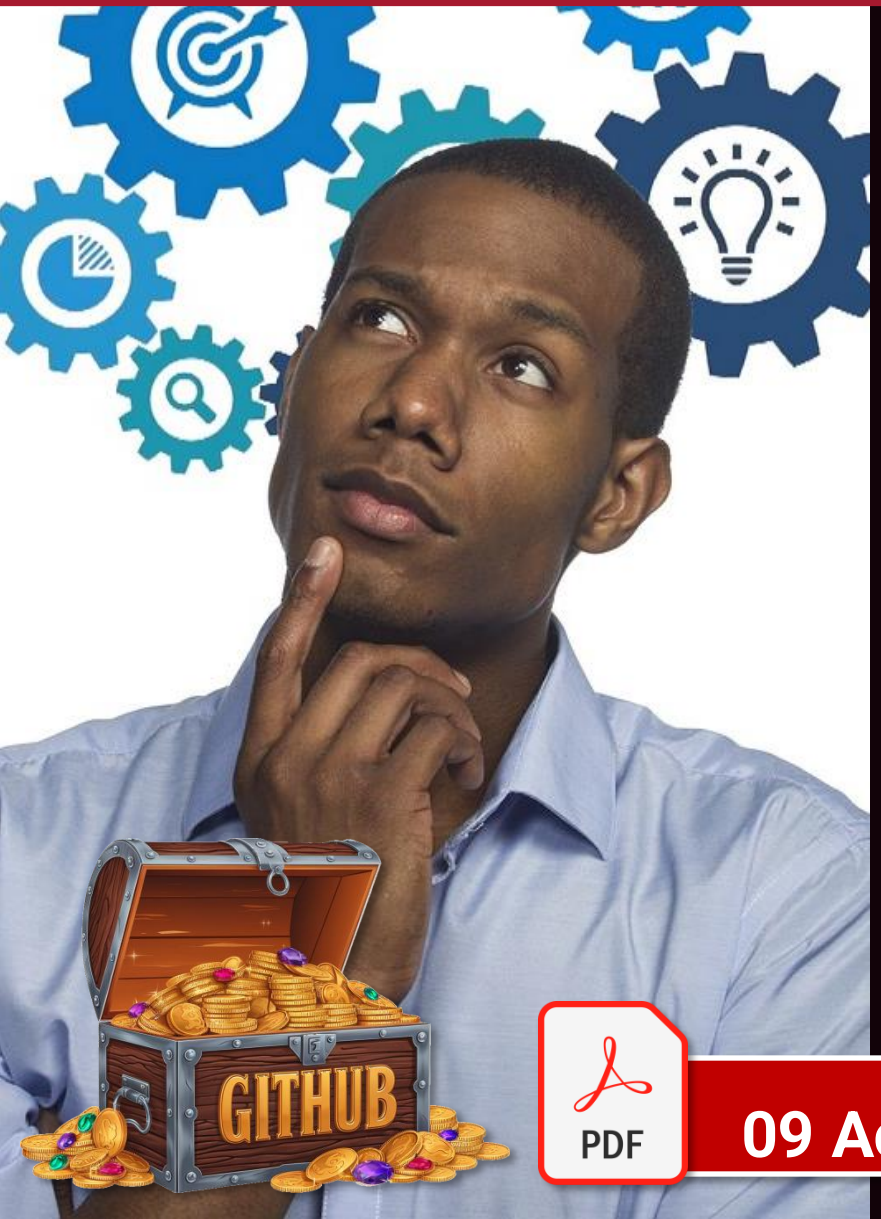
08 Best Practices and Considerations.pdf

AGENDA

1. **Introductions, Resources, & Goals** (orient)
2. **Let's Play** (experience)
3. **Custom Game Bot Anatomy** (analyze)
4. **Why Educational games** (connect)
5. **Game Types Overview** (compare)
6. **Build Tool Orientation** (learn the workflow)
7. **Quick Game Build Exercise** (guided practice)
8. **Introducing Your AI Build Team** (support)
9. **The Five Prompt Build** (build plan)
10. **Live Game Bot Building!** (create)

Phase I: Learning Objectives (10 minutes)



1. Open BoodleBox and start a chat with the **Game Learning Objectives Assistant**
2. **Define** your subject area and target student group
3. Work with the bot to create **2-3 clear learning objectives**
4. **Share** with a partner for feedback

PDF

09 Accessing & Stacking the OLC Game Workshop Bots.pdf

Phase II: Game Types (10 minutes)

1. **Stack** in the Educational **Games Type** Assistant
2. Tell it the selected **Learning Objectives**, AI Integration type you like
3. Explore the **Game Types**
4. **Select** the **game type** you like the best
5. **Share** with a partner for feedback

Phase III: Assessment (10 minutes)

1. **Stack** in the **Game Learning Assessment** Assistant
2. Share your selected **game type** and **learning objectives**
3. Develop an **assessment strategy** that balances process and product
4. Create at least one **assessment rubric** for your game
5. Share with a partner for feedback

Phase IV: Game Creation (20 minutes)

1. **Stack** in the **Game Implementation Bot**
2. Get **Instructions** and add to **bot build**
3. Build and add **Knowledge Pieces**
4. Upload **Knowledge** and update **Greeting**
5. **Test** and **iterate** your game

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10 OLC Game Bot Build Steps.pdf

Table Debrief

1. What worked about the experience?
2. What confused or frustrated you?
3. What learning move did the bot encourage (reflection, decision, feedback, creativity)?

Wrap Up

Learning Objectives

You've crafted precise learning objectives that provide a clear vision of successful learning in your educational context.

Game Type

You've identified game formats that support your educational goals while addressing the unique needs of your subject matter and students.

Assessment Strategy

You've developed integrated assessment approaches that measure how students apply knowledge in meaningful contexts.

Implementation Path Identified

You've mapped a practical implementation plan for your educational game, giving you a clear roadmap to execute your vision.

Final Discussion

Questions Lead Curiosity

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