

PRD: Project BRIDGEVIEWS

Lead Architect: Charles John Schmied

Status: Blueprint Finalized

Target Platform: Web (Next.js/Firebase/Vercel)

Dev Environment: Google Antigravity (Agentic Orchestration)

## 1. Project Overview & Vision

BRIDGEVIEWS is a "Literature Lab" designed for high school English students. It serves as an AI-orchestrated environment where students engage in deep literary analysis through specialized "Spaces." The platform bridges the gap between teacher-led curriculum and AI exploration by providing a dual-layered system: a student-facing Socratic tutor and a teacher-facing Synthesis Agent.

## 2. The "Balanced Anchor" Architecture

- The Anchor: High-weighting for teacher-provided rubrics, lesson plans, and "pre-baked" academic standards.
- The Sail: General LLM capabilities used for creative analogies, historical context, and diverse literary perspectives.
- The Voice: The teacher (Charles) defines the "Soul" of each Space via custom system instructions ("Gems").

## 3. Core Features & Multi-Agent Logic

### 3.1. The Space Orchestrator (Teacher Dashboard)

- Gem Surface: A UI for writing system instructions that define the chatbot's persona and objectives.
- Hybrid Knowledge Base:
- The Library: Pre-baked standards and classic texts.
- The Desk: Drag-and-drop zone for current unit PDFs and modern articles.
- MCP Integration: Use Model Context Protocol to link local curriculum folders directly to the AI's memory.

### 3.2. Layer One: The Analyst (Agentic Monitoring)

- Role: Background agent listening to live Firestore chat streams.
- Tagging System: Every interaction is tagged with metadata:
- Concept Mastery: (e.g., Identifying paradox vs. irony).
- Emotional State: (Engaged, Frustrated, Looping).
- Rubric Progress: (Has provided textual evidence?).

### 3.3. Layer Two: The Synthesis Agent (Instructor-Collaborator)

- Interface: Support for Gemini Live (voice-to-voice) and text summaries.
- Pulse Reports: Answers queries like: "Who are the top three innovators right now?" or "Summarize why the room is currently frustrated."
- The Sentinel: Triggers subtle "Eco-Ink" Notifications for cognitive loops or high-level breakthroughs.

### 4. Mandatory Guardrails (The Invariants)

- Socratic Default: The AI must only provide one step of scaffolding at a time. No full-essay generation.
- Evidence Gate: All claims must be met with a request for textual evidence.
- Safety/PII: Automated scrubbing of student names and sensitive data.
- Redirection: Pivot non-academic queries back to the literary lesson via the "Bridge and Revert" technique.

### 5. UI/UX: The "Eco-Ink" Design System

- Aesthetic: "Plastic-free" digital experience.
- Palette: Warm whites (#FDFDFB), Charcoal grays (#333333), Forest Green accents.
- Typography: Priority on high-contrast, professional Serif fonts (e.g., EB Garamond).
- Tone: A minimalist, "Writer's Workshop" feel—calm, text-heavy, and distraction-free.

### 6. Technical Stack & Roadmap

- Models: Gemini 3 Flash (Student Chat), Gemini 3 Pro (Teacher Synthesis).
- Framework: Next.js + Tailwind CSS.

- Backend: Firebase (Firestore, Auth).
- Deployment: Vercel.

Phase Alpha: Core "Space" chat and Teacher Instruction UI.

Phase Beta: Analyst Agent integration and live metadata tagging.

Phase Gamma: Synthesis Agent voice integration and Dashboard "Pulse" view.