UX Audit & Heuristic Evaluation

1) Project Overview

According to the National Assessment of Educational Progress (NAEP), the average reading score in the nation at grade 12 in 2024 was 3 points lower than in 2019. More notably, this score was 10 points lower in 2024 than the first reading assessment in 1992. Given this decline in reading attainment, the need for EdTech platforms that focus on supporting reading instruction and literacy development is much needed.

In this context, [redacted] is an educational application built for K-12 teachers and students. The application generates reading passages, tiered vocabulary materials, and lesson plans based on specific educational standards. It also includes an AI chatbot named “Lex” that provides reading assistance to students and collects and interprets classroom data for teachers.

The tool addresses the time teachers spend manually differentiating curricula. Teachers often need to write or find multiple versions of a text to match different reading levels in a single classroom. [redacted] automates this work through the production of texts and lesson frameworks at varying difficulty levels that meet required curriculum standards.

> ***Core User Flow:*** *Teachers log in to select ELA standards and generate a customized reading passage and lesson plan, which they then assign to their class. After students finish the work, the teacher reviews the resulting comprehension scores and uses the AI assistant to analyze the data.*

2) Ecosystem & Context

[redacted] has three stakeholder tiers. The primary users are teachers and K-12 students. Teachers use the backend to build classes and assign adapted texts. Students read the material and answer comprehension questions via the Lex chatbot, or work on provided assignments.

Secondary stakeholders interact with the software indirectly. School administrators control budgets and set literacy targets. Parents manage student habits at home. Classmates form the social environment where students compare progress.

Tertiary stakeholders dictate rules and provide source material. State boards define proficiency standards. Content creators write the original texts. Regulators enforce student data privacy laws.

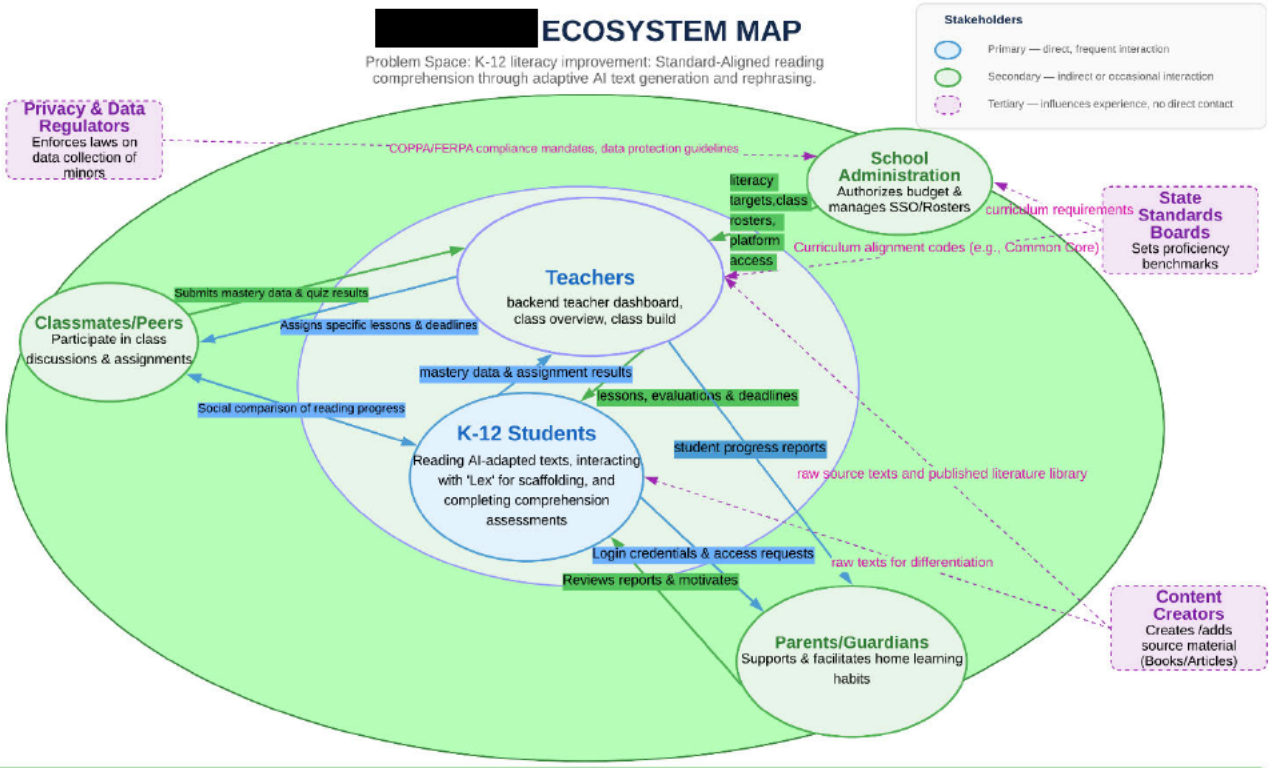
Tensions and UX Requirements

a) **State Standards Boards vs. Teachers:** State boards mandate curriculum rules. Teachers must turn these rules into daily assignments.
UX Requirement: The interface must connect state rules directly to classroom application. If the system displays only alphanumeric codes without text descriptions, teachers must leave the platform to search state databases. That interruption breaks the user flow and slows down lesson planning.

b) **School Administration vs. Teachers:** Administrators approve budgets and require data that prove that students meet district targets. Teachers need fast and practical tools to support individual students.

UX Requirement: A dashboard that only shows generic data tables fails both groups. Teachers miss the specific information necessary to change instruction, and administrators cannot justify the monthly license. The interface has to convert raw scores into clear trends or specific alerts to prove value.

c) **Content Creators vs. Lex:** Content creators write the original texts and theories. Lex processes this to generate lesson plans and answer questions. The conflict is over academic attribution.
UX Requirement: Teachers verify AI output before classroom use. If the chatbot omits citations for its lesson frameworks, teachers lose trust in the software. The conversational interface must link directly to the original source material.



INVESTIGATION FOCUS: What I Want to Learn Next

Based on my observations, I want to trace the Teacher's experience because navigating between standard-alignment, AI content generation, and student data analysis currently introduces workflow friction.

My question: What is the teacher's experience when navigating [redacted] to construct a standards-aligned reading assignment and generate an accompanying lesson plan?

Figure 1: [redacted] Ecosystem Map. Arrows indicate data and mandate flows between stakeholders, establishing the context for the UX tensions analyzed below. The inner circles represent direct platform users, while the outer boundaries represent systemic constraints.

Section 1: Context

Mr Yue: First-Year Teacher (Pressed for time, wants standards alignment).

A new teacher signs up for [redacted] to create a standards- aligned reading assignment and lesson plan for a 3rd grade class.

Efficiently generate high-quality, differentiated literacy content and track student progress. They want to know if [redacted] is the right fit to save them time on lesson planning.

Journey Map

Section 2: The Experience

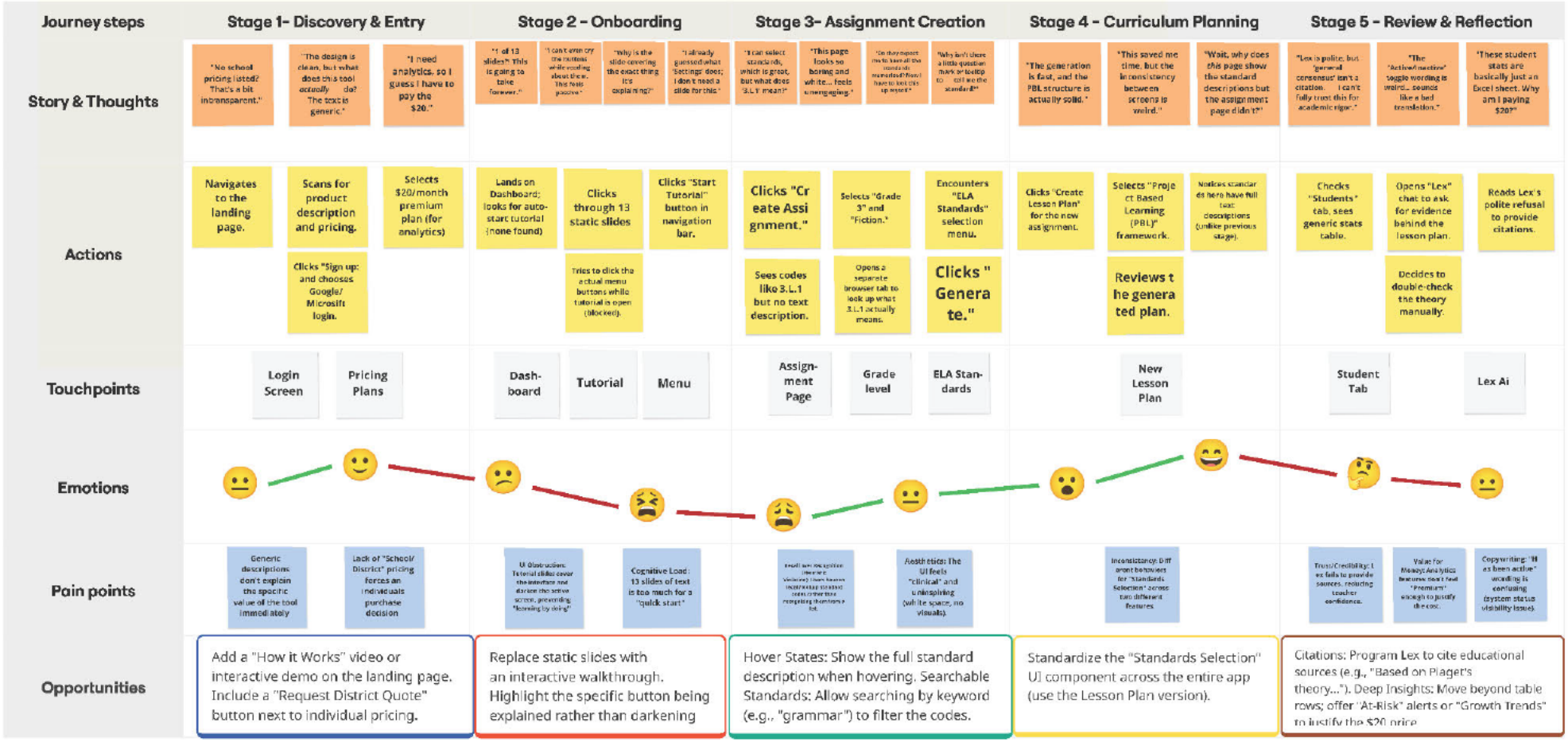


Figure 2: Learner Journey Map. This tracks a first-year teacher navigating from account creation to evaluating student analytics and AI-generated lesson frameworks.

3) Journey Map

Key Touchpoints

Users navigate several platform areas: the login screen, main dashboard, tutorial overlay, assignment creation form, standards selection menu, lesson plan generator, student data tab, and the Lex chat interface.

Pain Points and Usability

Technical entry and content generation work smoothly. Google and Microsoft single sign-ons are fast, and the lesson generator builds solid Project-Based Learning structures in seconds.

Specific tasks introduce friction. The onboarding tutorial blocks the main interface with 13 mandatory static slides. On the assignment page, ELA standards appear only as alphanumeric codes without descriptions. The student analytics tab relies on a basic, spreadsheet-style data table. Finally, Lex refuses to provide citations when asked for the pedagogical evidence behind its lesson plans.

Ecosystem Tensions

These usability issues tie directly to the stakeholder tensions in the ecosystem map.

- **State Standards Boards:** Because the system omits ELA text descriptions, teachers must leave the workflow to look up state benchmarks externally.
- **School Administration:** The basic data table serves neither party. Administrators cannot use it to justify the monthly subscription, and teachers cannot extract unique insights to adjust their instruction.
- **Content Creators:** Lex damages user trust by refusing to cite its sources. Relying on “general consensus” instead of academic citations forces teachers to leave the platform to verify requested educational theories.

4) Walkthrough Findings

Friction Point 1: Opaque Standards Selection

- **Location:** “Create Reading Assignment” selection.
- **Issue:** The standards dropdown menu displays only alphanumeric codes. It lacks the corresponding text descriptions. Teachers must open a separate browser tab to search state databases to identify the codes.

Figure 3: "Create Reading Assignment" modal showing numeric standards.

- **UX Impact:** This breaks the “Recognition over recall” heuristic. The system requires users to memorize or look up curriculum codes rather than selecting them from a descriptive list. The resulting cognitive load consumes planning time meant for pedagogical strategy.
- **Ecosystem Link:** State Standards Boards vs. Teachers. The platform does not convert state compliance mandates into a functional format for daily workflows.

Friction Point 2: Obstructive Onboarding Tutorial

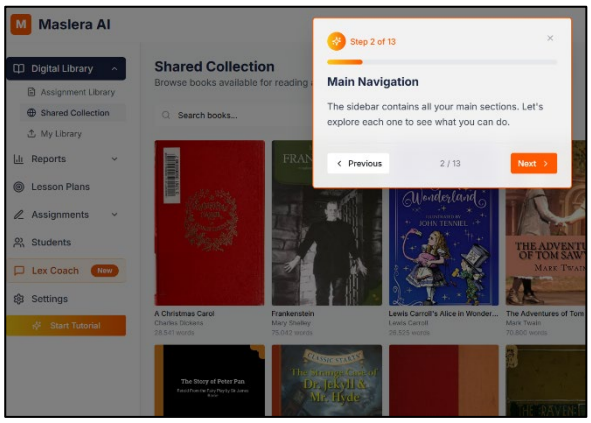


Figure 4: Static "Tutorial" modal overlaying darkened and deactivated background.

- **Location:** Main dashboard after login (Onboarding stage).
- **Issue:** A mandatory 13-slide tutorial darkens the background UI and blocks interaction with the dashboard. The slides explain obvious buttons instead of core task walkthroughs.
- **UX Impact:** This fails both the “User control and freedom” and “Help and documentation” heuristics. The system forces a passive reading sequence and prevents learning by doing. The lack of task-focused guidance creates a barrier to entry that deters teachers from adopting the platform.
- **Ecosystem Link:** Teachers and School Administration. If onboarding barriers prevent teacher adoption, the administration's budget for the software yields no return.

Friction Point 3: Lack of Evidence-Based Citations in AI Chat

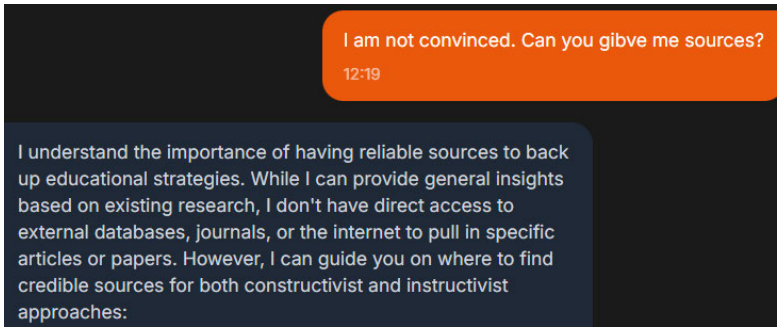


Figure 5: Lex chat interface with request for sources.

- **Location:** Lex Coach chat interface (Review & Reflection stage).
- **Issue:** When asked for the pedagogical reasoning behind a lesson plan, Lex provides generic explanations. If pressed for sources, the AI refuses, stating its recommendations rely on “general consensus”, not on specific research.
- **UX Impact:** This violates the “Match between system and the real world” heuristic. Curriculum design requires evidence-based citations. Vague consensus claims ignore established academic conventions. Teachers must spend time verifying the instructional strategies manually, canceling out the tool's intended efficiency.
- **Ecosystem Link:** Content Creators vs. AI (Lex). The AI uses external educational theories without attribution, which damages user trust in the platform's academic validity.

5) Research Questions

Based on the friction points identified in the walkthrough, the following research questions will guide the upcoming usability testing and user interviews. These questions are designed to move beyond expert evaluation and observe how actual K-12 teachers interact with the system's current architecture.

1. **Standards Selection:** Can teachers successfully and accurately align a newly generated reading passage to a specific ELA concept (e.g., “Grammar & Usage”) using the current alphanumeric dropdown menu, or are they forced to rely on external search engines to decode the standards?
   Connection to Findings: Tests Friction Point 1 (Recognition over recall).

   Success Metric: Task completion rate without leaving the [redacted] interface.

2. **Onboarding Effectiveness:** When presented with the 13-slide tutorial upon first login, do teachers read the content, skip it, or abandon the process, and how does their interaction with the tutorial impact their time-on-task when asked to create their first assignment?
   Connection to Findings: Tests Friction Point 2 (User control and freedom).

   Success Metric: Time-on-task for the first assignment and qualitative feedback on the onboarding experience.

3. **AI Trust & Attribution:** When interacting with the “Lex Coach” to review an AI-generated lesson plan, how do teachers attempt to verify the pedagogical framework, and how does the chatbot's reliance on “general consensus” over explicit citations impact their stated likelihood of deploying the lesson in a real classroom?
   Connection to Findings: Tests Friction Point 3 (Match between system and real world).

   Success Metric: Interview responses after task completion regarding trust, academic rigor, and willingness to adopt the AI's recommendations.