

Case Study



Why Testing AI Agents Matters in E-Learning

Your AI
Said
What?



Project Overview



A US-based EdTech company launched a personalized AI learning assistant designed to guide users through self-paced courses.

The AI agent handled content recommendations, answered questions in real-time, and tracked learning progress.



Client's Challenges



- ✗ Users reported irrelevant content suggestions and incorrectly generated answers.
- ✗ Nearly 58% of users abandoned the AI assistant within just three days of onboarding.
- ✗ The product team had limited visibility into how the AI behaved across devices and learning scenarios.
- ✗ Urgent need to verify UX and system behavior before scaling to 100,000+ users.



Implementation



- 1 Analyzed how the AI agent interacted with users across different learning paths.
- 2 Identified the riskiest areas affecting user trust and course completion.
- 3 Created a tailored QA roadmap prioritizing onboarding journeys, personalized content recommendations, answer validation, progress tracking, and triggers of early AI drop-off.
- 4 Executed testing in three focused sprints.
- 5 After each sprint, we held a QA review session with the client's dev and AI teams to validate fixes, adjust priorities, and re-test under real-user conditions.

Our Solution



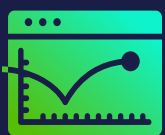
Functional testing



Integration testing



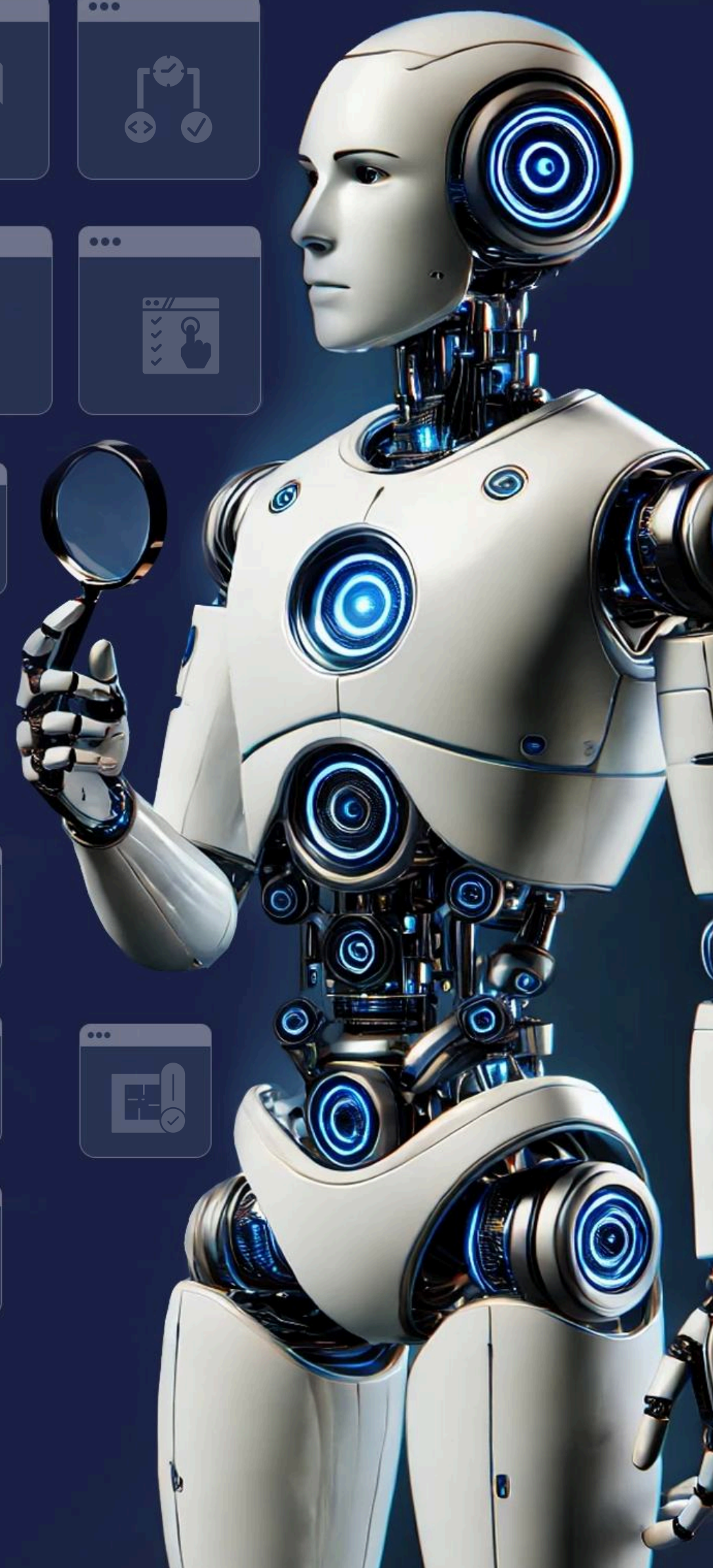
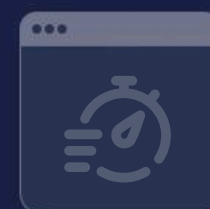
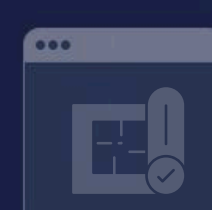
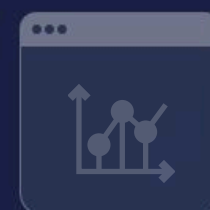
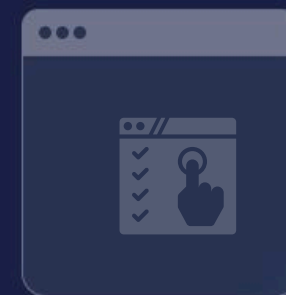
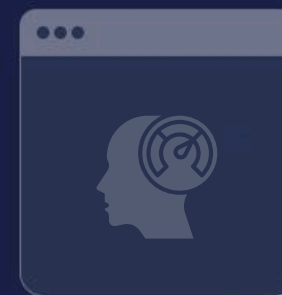
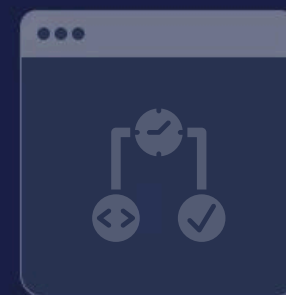
UX testing



Regression testing



Real-device
compatibility testing



Testing Environments and Tools Used

- **Devices:**

- Android 11–14
- iOS 14–18 on iPads and iPhones

- **Tools:**

- Charles Proxy
- ChatGPT, Gemini
- Grok (for AI response validation)
- BrowserStack
- TestRail

- **Additional setups:**

simulated environments for
unstable internet and long
learning sessions



Tangible Results For The Client

✓ Dropout rate during AI usage reduced from **58% to 21%** in the first month

✓ Incorrect answers decreased **by 72%**, restoring user trust

✓ Session duration with the AI assistant increased **by 48%**

✓ Chat completion rate grew **from 16% to 42%**



Conclusions



Reliability in AI-powered e-learning isn't just about smart algorithms — it's about how they behave in the hands of real users.

Through structured QA with a focus on AI-agent behavior, we helped our client turn technical uncertainty into user growth and measurable retention.





**Don't let your AI assistant
fumble in front of the class
and test your AI tutor like
students depend on it
(because they do)**

Book a free consultation

