

AI-Verified YouTube Learning — Executive Summary

Problem: Millions of learners use YouTube daily but have no formal way to validate or showcase their learning. Employers and educators lack tools to assess informal knowledge. Existing certification platforms are often expensive and not video-driven.

Solution: An AI-powered application that integrates YouTube API to fetch video content and transcripts, uses LLM to generate context-based quizzes, evaluates performance, and issues digital certificates. Certificates are shareable and verifiable.

Target Market: Students, upskilling professionals, and content creators. Gen Z learners heavily rely on YouTube for self-education. Global e-learning market projected to exceed \$450B by 2030.

Key Features:

- Secure login & registration
- YouTube video integration
- AI-generated quizzes & automated grading
- Smart certificate generation & sharing
- Dashboard to track learning progress

Development Sprints (3 weeks each):

Sprint 1: Core setup (Login, Registration, YouTube API integration) Sprint 2: Quiz generation, LLM grading, Certificate module Sprint 3: Dashboard, Sharing, UX enhancements

Future Roadmap: Expand to other video platforms, add AI feedback and personalized learning paths, introduce micro-certifications and gamification, partnerships with educational institutions.