

**DIGI EDU HACK**



**STUDYQUEST**

BECAUSE LEARNING IS A JOURNEY

**2025**

**Team Gamma**

**YERUN challenge: “Hack the Future of Tutoring”**

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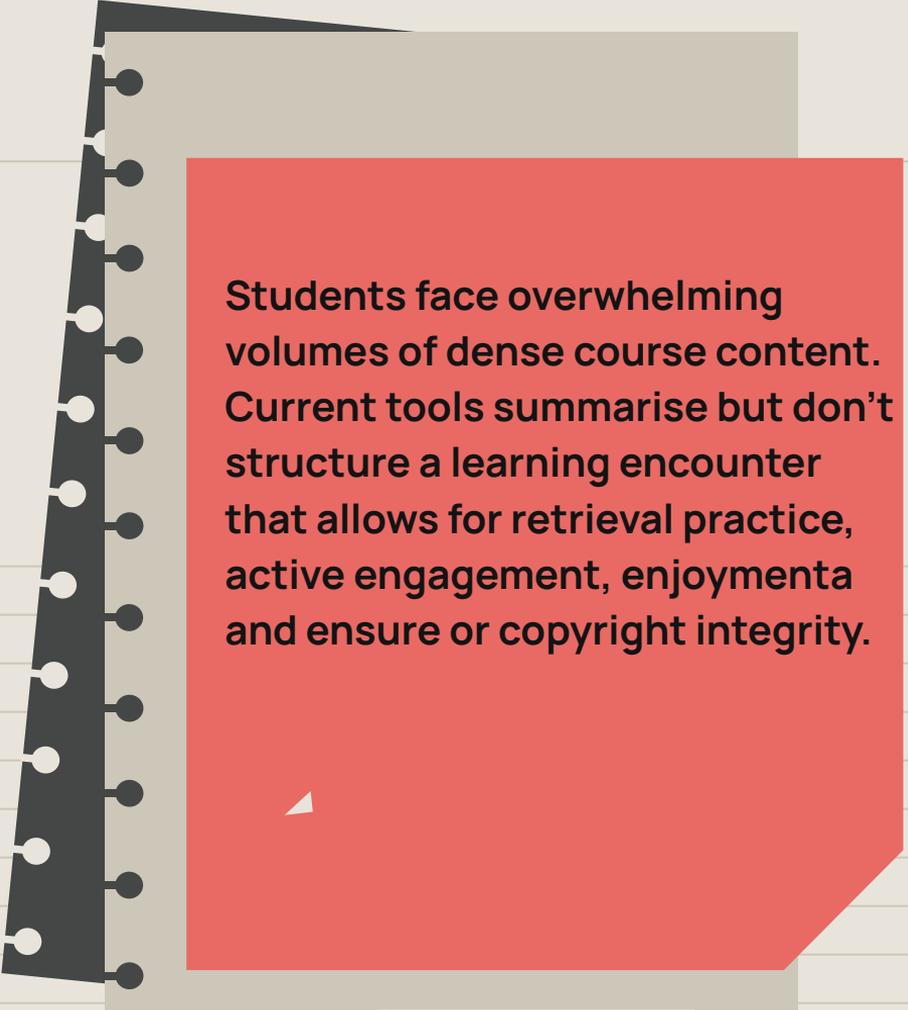
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# Context And Framing Of The Problem

The central issue is not access to information but the structuring of learning experiences. Research in cognitive psychology demonstrates that retention is enhanced when learners encounter “desirable difficulties” (Bjork & Bjork, 2011), rather than simplified summaries. Summarisation tools fail to embed retrieval practice or active engagement, which are critical for durable learning (Brown, Roediger, & McDaniel, 2014). StudyQuest addresses this gap by transforming raw course content into structured, gamified pathways that integrate scientifically validated learning principles.



**Students face overwhelming volumes of dense course content. Current tools summarise but don't structure a learning encounter that allows for retrieval practice, active engagement, enjoyment and ensure or copyright integrity.**

## Context: Confronting the Challenge

The challenge: transform raw course content into adaptive, gamified journeys that ensure comprehension, motivation, and transparency.

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- While students actively engage in note-taking and reading, these activities alone do not maximize retention. Dunlosky et al. (2013)
- highlight that techniques such as retrieval practice, distributed
- practice, and elaborative interrogation are more effective.
- StudyQuest embeds these methods into gamified structures, ensuring
- that learners are not merely exposed to content but are required to
- interact with it through checkpoints, reflection prompts (Di Stefano, Pisano, & Staats, 2015), and generative learning activities (Fiorella, 2023).
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# **Solution Description: Overview - Final Product: StudyQuest**

Gamification has been shown to increase learner motivation and persistence (Hamari, Koivisto, & Sarsa, 2014). By embedding mechanics familiar from popular games—progression through levels, accumulation of points, and streak maintenance—StudyQuest leverages motivational psychology (Deci & Ryan, 2000). Notifications act as external cues to sustain engagement, aligning with findings on habit formation and reinforcement learning. The inclusion of citation protocols ensures academic transparency and addresses concerns of intellectual property integrity.

**StudyQuest converts course content into gamified study quests:**

- **Bite-sized lessons**
- **Adaptive pacing**
- **Checkpoints for comprehension**
- **Points, streaks, notifications**
- **Built-in citation**

# TECHNICAL ARCHITECTURE

1. Content ingestion
2. Segmentation engine
3. Gamification engine
4. Adaptive analytics
5. Notification system
6. Citation layer

The platform architecture integrates natural language processing (NLP) pipelines to ingest and segment course content into modular units. A gamification engine overlays progression mechanics—points, badges, streaks—derived from popular mobile game reward loops. Adaptive analytics, informed by learner interaction data, adjust pacing and difficulty, consistent with adaptive hypermedia models (Brusilovsky & Millán, 2007). Notifications are delivered via mobile OS APIs to sustain daily engagement. Finally, a citation layer embeds references at the unit level, ensuring compliance with copyright standards and promoting academic integrity.

# Solution Description: Success Measure

Success will be evaluated through both cognitive and behavioral metrics. Cognitive outcomes include improved comprehension and retention, measured via retrieval practice assessments (Chi et al., 2001; Chi, Roy, & Hausmann, 2008). Behavioral outcomes include engagement indicators such as streak length, points earned, and daily active use, paralleling metrics in gamified environments. Institutional adoption will be assessed through pilot studies, with copyright compliance verified through embedded citation protocols.

Success measured by:

- Comprehension & retention gains
- Engagement metrics
- Reduced tutoring reliance
- Copyright compliance
- Institutional adoption

# Solution: Describe in a Tweet

**“StudyQuest turns your course notes into a gamified study journey—adaptive, motivating, and copyright-safe. Progress with points, streaks, and notifications.”**

This concise description captures the essence of StudyQuest: gamification, adaptivity, and transparency. It communicates the innovation in a format accessible to broader audiences while retaining academic rigor.

# TARGET GROUPS FOR STUDYQUEST



## TARGET GROUPS

Target groups:

- University students
- Corporate trainees
- Vocational learners
- Lifelong learners

## PERSONA 2

Secondary personas include the “Career Learner” (corporate training, 25–65) and the “Skill Builder” (vocational apprenticeships).

## PERSONA 1

the primary persona as the “Exam-Ready Student”: aged 18–24, mobile-first, motivated by progression and recognition, and constrained by limited access to tutoring.

## ABOUT THE SEGMENTATION

This segmentation aligns with professional marketing standards, ensuring that product positioning resonates with diverse learner profiles

# Target Group: Engagement Plan

Engagement strategies are grounded in motivational psychology and teamwork research. Notifications and streak mechanics sustain daily engagement, while collaborative features foster psychological safety (Edmondson, 2018) and collective intelligence (Hackman, 2011). Transparent citation builds institutional trust, ensuring adoption in formal education contexts.

## Engagement through:

- Gamified quests
- Adaptive pacing
- Collaborative study groups
- Notifications & streaks
- Transparent citation

# IMPACT OVERVIEW

StudyQuest makes dense content accessible, engaging, and equitable.

The platform operationalizes generative learning (Fiorella & Mayer, 2015) and deliberate practice (Ericsson, Krampe, & Tesch-Römer, 1993) to enhance mastery. By reducing reliance on costly tutoring, StudyQuest promotes equity in access to exam readiness and professional training.

# Impact: Examples/Scenarios - StudyQuest

## Impact Scenarios

University: lecture notes → quests

- Corporate: onboarding manuals → checkpoints
- Vocational: technical manuals → step-by-step paths
- Lifelong learning: hobbies/languages → quests

These scenarios illustrate the transferability of StudyQuest. In universities, lecture notes are transformed into interactive quests. In corporate contexts, onboarding manuals become gamified modules.

Vocational learners benefit from stepwise technical training, while lifelong learners engage with hobbies or languages through motivating quests. Each scenario demonstrates scalability across disciplines.

## Assess: Innovativeness

“StudyQuest is the first AI study tool that turns course content into a personalised, gamified journey—while citing all sources to guarantee copyright integrity.



The innovation lies in integrating gamification, adaptive analytics, and citation control into a single framework. Unlike existing tools, StudyQuest ensures both learner motivation and academic transparency, addressing pedagogical and institutional needs simultaneously.

# Assess: Transferability

StudyQuest applies across higher education, corporate training, vocational learning, and lifelong education.

Transferability is achieved through modular design. Any dense content can be ingested and transformed into gamified learning paths. This aligns with evidence that reflection and active engagement improve performance across contexts (Di Stefano et al., 2015).

# Assess: Sustainability

- Short term: pilot testing
- Mid-term: partnerships, multilingual support, collaborative features
- Long term: replication across contexts, sustainable practices

Sustainability is ensured through iterative development. Short-term pilots validate usability. Mid-term partnerships expand reach and functionality. Long-term replication embeds sustainable digital practices, consistent with UNESCO (2020) recommendations for equitable education. StudyQuest catalyzes systemic change by reducing tutoring costs and promoting equity.

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# Team Gamma - Group Members

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TITLE

**THANK  
YOU!**



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