# DIGIEDUHACK SOLUTION CANVAS

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| **Title of the solution:** | EduKate | **Team name:** | StudyBudy |
| **Challenge addressed:** | How might We push human flourishment through disruptive emerging Tech-Based education? | **Challenge category:** | Emerging Technologies for education |

**Background of the team:**

(multiple selections possible in case of mixed teams)

- [x] Higher Education Students
- [ ] Researchers
- [ ] Professionals
- [ ] Teachers
- [ ] Primary School Students
- [ ] Secondary School Students
- [ ] Others (please specify)

## Solution description

What is the final product/service/tool/activity you're proposing? What are its main elements, technologies and objectives? Could you please include a brief implementation plan with some key overall milestones, resources required and eventual barriers foreseen?
How could your solution be used to enhance digital education nowadays? How could its success be measured?

Study-focused app designed to enhance the efficiency and effectiveness of learning sessions for students. This app integrates scientifically proven study techniques such as pomodoro, active recall, and AI-generated quizzes to offer a more holistic and structured approach to studying. The app is gamified to increase motivation and engagement, rewarding users with badges and achievements when they complete multiple study sessions successfully.

Its main elements are scientifically proven study techniques that help students maximize their learning potential and retain information more effectively.

Implementation: Develop database and core features: pomodoro timer, active recall interface as flash cards, basic quiz generation, and one on one tutoring with Kate our educative AI. An eventual barrier can be the prize of tokens when using AI.

Our app enhances digital education by providing tools for personalized, science-backed study sessions that improve retention and engagement. The integration of AI adds a unique layer of adaptability and not only supports academic performance but also fosters self-directed learning and autonomy, empowering students to take control of their educational journey.

Track how many users actively use the app daily or weekly. Higher engagement suggests that students find the app valuable and are integrating it into their study routines.

## Context

What is the current or future problem you're trying to solve? How does your solution align with DigiEduHack 2024 annual theme?
How does your solution confront the challenge posed by the hackathon organiser and how does it address the challenge category?

Students are not achieving optimal educational outcomes because they rely on ineffective study techniques, lack guidance in proven methods for learning, and experience significant stress and anxiety around their studies. A survey showed that 80% of students reported they had never been taught study techniques.

Our solution directly tackles the challenge posed by the hackathon by leveraging disruptive, emerging technologies to transform the way students approach studying. By integrating AI-driven personalized quizzes, evidence-based study techniques like pomodoro and active recall, our app provides a holistic and structured approach to learning that enhances focus, retention, and engagement.

## Target group

Who is/are the target group/s of your solution and how will they benefit from it? Why is your solution relevant to them? how do you plan to engage these groups so you fully meet their specific needs?

The target group for this learning app would primarily be students at various levels of education, ranging from high school to university. It could also extend to lifelong learners seeking to acquire new skills or knowledge The app is highly relevant to students because it provides a personalized and interactive learning experience tailored to individual needs. By offering tools like quizzes, flashcards, and chat messaging, it helps students focus on areas where they need the most improvement, making learning more efficient. The app encourages active learning through proven techniques such as spaced repetition and active recall, which enhances retention and understanding. With flexible, self-paced learning, it fits into students' busy schedules and supports exam preparation by offering practice quizzes and progress tracking, helping students gauge their readiness.

To engage these groups effectively, the app will incorporate continuous feedback from users to adapt and improve over time. It will offer a variety of content types to cater to different learning styles, and features like progress tracking, and gamification will motivate students to stay engaged. Additionally, ensuring accessibility and providing support for students with disabilities will ensure that the app is inclusive and meets the diverse needs of all learners.

## Impact

How will your solution catalyse changes in education and what impacts will it have at social and environmental level? Could you provide examples or scenarios illustrating how such changes and impacts might unfold?

Our app has the potential to catalyze significant changes in education by democratizing access to high-quality learning techiques and personalized support. By integrating AI-driven study tools and real-time assistance, students can adopt more effective learning strategies, which in turn can improve overall academic performance and reduce educational inequalities. For example, students in underfunded schools or rural areas, where access to personalized tutoring or study resources is limited, can benefit greatly from an AI-powered app that is always accessible and adaptable to their needs. This could help bridge the gap between privileged students with access to tutors and resources, and those without.

Socially, the app can contribute to greater inclusivity, particularly for neurodivergent students or those with learning disabilities. By offering customizable study modes, such as adjusting content difficulty, pace, or sensory engagement, the app ensures that every student can learn in a way that suits them best. Environmental impacts could also be seen as the app reduces the need for physical textbooks, paper-based materials, and in-person tutoring, contributing to sustainability goals. A scenario where this could make a difference might be in a school district where digital resources replace paper textbooks, reducing both costs and environmental waste while improving the quality of education through AI-driven personalized learning paths.

## Describe it in a tweet

How would you describe your solution in a short catchy way with maximum 280 characters?

#EduKate is an AI-powered study app that helps students improve their study habits, track progress, and access personalized quizzes & flashcards. Come join us for better learning!

## Innovativeness

What makes your solution different and original? Are there similar solutions or approaches currently available or implemented by education sector practitioners? If so, why and to what extent is your solution better?

Our app is designed with high school and university students in mind, offering customizable features to suit different learning styles and preferences. While other apps exist to help students stay focused, our app goes further by integrating proven study techniques, as well as an AI bot that is always ready to assist. This bot can provide additional explanations, answer questions, and help clarify concepts, making learning more accessible and interactive. It's also neurodivergent-friendly, with adjustable settings to help users, especially those with ADHD, maintain focus without overstimulation. This inclusive design makes learning more accessible, interactive, and effective for all students.

## Transferability

Can your solution partly or fully be used in other education/learning contexts or disciplines? Could you provide any example?

Yes, our solution can be incorporated in educational institutions where teachers can monitor students' study metrics, providing insights into learning patterns and progress. This feature could support targeted interventions and personalized learning strategies, making it applicable across various educational contexts and disciplines.

## Sustainability

Once you have a prototype, what are your plans for a further development, implementation upscale and replication of the solution? How do you see it working in the mid- and long term?

In the mid- to long-term, the app plans to scale by continuously enhancing features based on user feedback and expanding its content library. We will introduce a freemium model, providing essential tools for free with non-intrusive ads, ensuring both accessibility and profitability. Leveraging cloud technologies and forming partnerships with educational institutions will facilitate seamless scalability. To support sustainable growth, the app will explore monetization strategies like premium subscriptions and educational partnerships, ensuring it remains relevant and impactful in the evolving educational landscape.

## Team work

Present the members of your team.
Why are you the perfect team to develop this work and what are the competencies you all bring in so the solution is developed successfully? What is your expertise within the thematic field concerned? Are you planning to continue working as a team in the future? If so, why?

Our team is composed of skilled students: María, María Renée, Fernando, and Fernanda. As students ourselves, we understand the challenges of effective studying and are motivated to create a solution that truly helps others. Our firsthand experience gives us unique insight into the problem, making us the ideal team to develop a tool that can empower fellow students to succeed. As programmers, we are excited to continue developing an application that ultimately seeks to enhance learning experiences and support students in reaching their full potential.

***Prototype link:***
https://docs.google.com/document/d/1pMHm4SPrRO_7XaMXOAG46qsWuKnyJCpTPw_U6km8roM/edit?usp=sharing

***Figma:*** https://www.figma.com/design/wJ7sAQnDR56d6yasw3UafK/StudyMate?node-id=200-1651&t=3jkyXyBIkeQyxSqP-1

***Presentation:***
https://www.figma.com/slides/NGmntcZSH0SRDZ4DzXafMM/EduKate-PPT?node-id=2-2&t=r49tb0FKFbQWO41p-1

## *Notes:*

link: https://www.gcu.edu/blog/gcu-experience/analysis-study-habits-according-students-across-us

**An Analysis of Study Habits, According to Students Across the U.S. – Key Points**

- **Survey Overview**:
  - Conducted by Grand Canyon Education (GCE) with over 1,000 students from various education levels across the U.S.
  - Focus areas: study timing, location, snacks, strategies, organization, and study habits by degree level, area of study, and gender.
- **Study Time**:
  - **Daily Study Time**:
    - 50.5% study less than 2 hours per day.
    - 34.4% study 3–4 hours per day.
    - 15% study more than 5 hours per day.
  - **Weekly Study Time**:
    - Majority study 6–10 hours per week.
    - Agriculture/Veterinary and Education students typically study 0–5 hours per week.
    - Business, Engineering, Health, Humanities, and Sports students study 6–10 hours per week.
- **Impact of Employment on Study Time**:

    - 37.4% of students work less than 5 hours per week.
    - 18.5% work nearly full-time, facing time constraints due to balancing work and studies.
- **Study Habits by Degree Level**:
    - Higher degree levels generally correlate with more study time.
    - Most students prefer studying alone; only 16% favor study groups.
    - Bachelor's students (67.9%) are less likely to multitask in lectures.
    - Time of day preference varies:
        - Associate's students: Afternoon
        - Bachelor's and Master's students: Evening
        - Doctoral students: Morning and Evening equally.
- **Study Habits by Gender**:
    - **Organization**: 73.1% of females vs. 44.2% of males use a planner/calendar.
    - **Timing for Exams**:
        - 37% of females start studying 2–4 days in advance.
        - 31.9% of males start 5+ days in advance.
    - **Study Time Preference**: Females – Afternoon; Males – Evening.
    - Both genders prefer writing notes over typing.
- **Ideal Study Environment**:
    - **Snacks and Drinks**:
        - Favorite snack: Popcorn (23.2%).
        - Favorite drink: Water (28.2%), followed by iced coffee and hot coffee.
    - **Sound Preferences**:
        - 41.8% of students prefer music (56.9% of them choose ambient/chill music).
        - 38.3% prefer silence.
- **Organizational Tools and Note-Taking**:
    - 65.1% use a planner/calendar for organization.
    - Majority prefer handwritten notes and calendars over digital ones, with 63.8% choosing handwriting.
- **Conclusion**:
    - Studying is essential regardless of major, gender, or education level.
    - GCU offers various resources to support students, including career resources, tutorials, discounts, and academic support.
    - GCU provides a wide range of online degree programs to suit students' passions and career goals.

link: https://news.yorku.ca/2019/04/25/study-finds-more-than-half-of-university-students-feel-they-need-better-basic-skills-to-succeed/

**Study Finds More Than Half of University Students Feel They Need Better Basic Skills to Succeed – Key Points**

- **Overview**:
  - Survey conducted at four Ontario universities: York University, Western University, University of Waterloo, and University of Toronto (Scarborough and Mississauga campuses).
  - Sample size: 2,230 students across various programs (humanities, social sciences, professional studies).
- **Findings on Skill Competency**:
  - Only 44% of students felt they possessed the basic academic skills required to succeed.
  - 41% were classified as at-risk due to limited basic skills.
  - 16% lacked nearly all fundamental skills for higher education.
- **Skills Assessed**:
  - Skills surveyed included writing, test-taking, analysis, time management, group management, research, presentations, and numeracy.
- **Observations**:
  - Family background, first-generation status, and international status had no noticeable impact on skill levels.
  - Students with lower skill levels often received lower grades, considered dropping out, and felt less satisfied with their university experience.
  - Despite the Ministry of Education's focus on these skills in Ontario's secondary school curriculum, high grades in high school did not correlate with basic skill competency.
- **High School Grades vs. Skill Levels**:
  - Many students with serious skill deficits reported receiving high grades in high school.
  - 63% of "functional" students, 56% of at-risk students, and 45% of dysfunctional students earned A or A+ grades in secondary school.
- **Lack of Improvement Over Time**:
  - The survey found no improvement in skill deficiencies across different university year levels.
- **Student Support Preferences**:
  - Over two-thirds of students expressed interest in a first-year course covering academic skills like effective studying, critical thinking, and writing.
- **Quotes from Researchers**:
  - **Robert Kenedy (York University)**: The data on student skills is "disturbing," underscoring the need for academic skills courses.
  - **Liang Hsuan Chen (University of Toronto Scarborough)**: Skills deficit is pervasive across all demographics, highlighting an urgent need for student support.

    - **Sharon Roberts (University of Waterloo)**: Many students need substantial support before and during their time at university to address academic competency challenges.
- **York University's Commitment**:
    - Emphasizes cross-disciplinary education, experiential learning, and innovative course design.
    - Known for fostering impactful ideas and career success among students.
    - Hosts Glendon Campus, Ontario's Centre of Excellence for French Language and Bilingual Postsecondary Education.

Link:
https://elpais.com/educacion/2024-07-09/el-mayor-estudio-sobre-el-aprendizaje-de-los-alumnos-de-secundaria-muestra-que-tecnicas-funcionan-y-cuales-no.html#:~:text=Y%20los%20autores%20analizaron%20el,%2C%20y%20generalmente%2C%20muchos%20m%C3%A1s.

**Summary of the study on learning in secondary school students:**

**Participants**: 3,414 secondary students in Spain.
**Study Methods Analyzed**: Elaboration, recall, spaced practice, rereading, highlighting, content copying, and literal memorization.

**Key Findings**:

- **Elaboration** (assigning personal meaning to the content) and **recall** (retrieving information from memory) showed a positive correlation with academic performance.
- Strategies like rereading, highlighting, content copying, and literal memorization did not significantly correlate with grades.
- **Spaced practice** did not correlate with grades in this study, although previous research supports its efficacy for long-term learning.

**Training in Study Methods**: 80% of students reported never receiving instruction on study techniques.

**Studying in Distracting Environments**:

- Studying in quiet places positively correlated with performance and reduced anxiety.
- Studying with music negatively correlated with academic performance.

**Confidence and Control**:

- **Self-efficacy** (confidence in one's learning ability) and **control beliefs** (belief that success depends on oneself) correlated with recall and elaboration strategies.

**Studying with Music**: 25% of students study with music, which was associated with lower academic performance.

**Key Data**:

- **Sample**: 3,414 students, primarily in ESO (Compulsory Secondary Education).
- **Context of Fieldwork**: Conducted in 27 publicly funded schools in Catalonia with socioeconomic diversity.
- **Data Collection Time**: Two surveys conducted during tutorial hours on different days.

This study underscores the importance of teaching effective study strategies, such as elaboration and recall, over passive techniques like highlighting and rereading, which remain the most common among students.

***Main audience: College Students***

- **Context**: University Environment
- **Scope:** Lack of an ultimate effective study session
- **Perspective:** I'm a university student, i don't have suitable study methods therefore i end up burnt-out and don't meet my study goals.
- **Insights:**
    - 80% of students reported they had never been taught study techniques.(último link)
    - Most students prefer studying alone; only 16% favor study groups.(primer link)
    - Over two-thirds of students expressed interest in a first-year course covering academic skills like effective studying, critical thinking, and writing.(segundo link)

## *Main problem:*

Students are not achieving optimal educational outcomes because they rely on ineffective study techniques, lack guidance in proven methods for learning, and experience significant stress and anxiety around their studies.

## *Study Techniques:*

*link: https://psychcentral.com/adhd/how-to-adapt-the-pomodoro-technique-adhd#bonus-tips*

***Pomodoro:***
Research shows that humans can sustain attention for around 8 to 15 minutes, making the Pomodoro Technique's short work intervals a natural fit. For individuals with ADHD, this method's structure may help with both starting tasks and preventing hyperfocus, which can sometimes lead to burnout.

What is the Pomodoro Technique?

The Pomodoro Technique is a six-step process that uses a timer to help users focus on tasks in short bursts, followed by breaks. Here's a basic breakdown:

1. **Choose a Task:** Select a task to work on.
2. **Set a Timer for 25 Minutes:** This is your focused work time.
3. **Work Until the Timer Goes Off:** Stay focused on your task until the timer ends.
4. **Take a Short Break (5 Minutes):** Step away to rest briefly.
5. **Repeat the Cycle Four Times:** After four cycles, take a longer break of 20-30 minutes.

This approach breaks long tasks into manageable chunks, helping individuals maintain focus without overwhelming themselves.


Fireman, P. (2023, December 7). 5 Study Tips for Neurodivergent College Students. Childrens Health Council. https://www.chconline.org/resourcelibrary/5-study-tips-for-neurodivergent-college-students/

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Zafra, I. (2024, July 9). El mayor estudio sobre el aprendizaje de los alumnos de secundaria muestra qué técnicas funcionan y cuáles no. El País. https://elpais.com/educacion/2024-07-09/el-mayor-estudio-sobre-el-aprendizaje-de-los-alumnos-de-secundaria-muestra-que-tecnicas-funcionan-y-cuales-no.html

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