DIGIEDUHACK SOLUTION CANVAS

Title of the s NADIA (New artificial intelligence teaching assistant)

Team name: NADIA

Challenge ac Disruptive technologies new methods of learning

Challenge category: beginners

Background of th

(multiple selections possible in case of mixed teams)

- ● Higher Education Students
- Researchers
- Primary School Students
- Professionals
- Secondary School Students
- Teachers
- Others (please specify)

Solution description

Nadia is an artificial intelligence system designed to play the role of teaching assistant. Taking into account the individual needs of each student, Nadia initially pulls out information based on a diagnostic assessment taken with high school students ranging between 12 and 15 years old.

Our envisaged AI tool personalizes and adjusts the learning process of each student, adapting to their needs, learning pace, skill levels, and even personal interests. This system produces reports, allowing teachers to obtain more precise information about each student's progress and offer more personalized support. Nadia's goal is to transform the traditional and homogenized educational system that perpetuates gaps in learning and limits the comprehensive development of students. Its purpose is to enhance the role of the teacher, optimizing their work and taking advantage of the benefits of personalized learning.

Nadia also adjusts the content according to the personal and cultural context of each student, making learning more meaningful. For example, if a student is interested in animals, a math problem could be explained with the height of giraffes instead of buildings, adapting from the simplest to the most complex. Continuously adapting to the performance of each student, as she carries out constant evaluations to adjust the difficulty of the content according to their progress.

Nadia's implementation plan envisions three phases: an initial development phase (3-6 months) to design the system and its interface, a pilot phase (6-9 months) in a small group of classrooms to fine-tune the system based on feedback, and a full rollout (9-12 months) to extend its use to more classrooms and train teachers. Necessary resources include technological infrastructure, software development, education experts to ensure content quality, and teacher trainers. Potential barriers include resistance to change by some teachers and the need for adequate infrastructure in schools.

Context

The established high school education system has not yet changed in many decades a single, homogenizing education despite the fact that each child has his or her own abilities, difficulties, and interests. This lack of personalization limits the comprehensive development of students, as it does not consider their individual needs or enhance their capabilities. This lack of adaptability results in students who face barriers, whether due to cognitive , different learning styles, or particular contexts, often falling behind.

In the long term, this situation perpetuates cycles of social and economic exclusion, as students fail to develop the skills necessary for their personal and professional lives. On the other hand, those with greater abilities also fail to find challenges appropriate to their potential, resulting in their potential being wasted. At both extremes, the lack of personalization and adaptability of the educational system generates an unequal and inefficient education that does not respond to the real needs of students.

Target group

High school students and teachers are the target groups for our platform.

We see in the short term a substantial improvement in the efficacy of the education methods brought by teachers and rapid interest and performance growth for students. In the long term, we could envisage students becoming more enthusiastic about learning and better at acquiring knowledge and engaging with classmates and teachers.

Impact

Nadia leverages AI to transform education by personalizing learning, adapting to the abilities, pace, and needs of each student. Nadia offers specific support to those who are struggling, helping them to progress, and greater challenges to those who are more advanced to realise their potential. In addition, by taking on repetitive tasks such as marking exams, Nadia frees up time for teachers to focus on better understanding and caring for their students, both academically and emotionally. In this way, Nadia promotes a fairer and higher quality education.

DOCUMENTATION: https://docs.google.com/document/d/1jI2cy8XE-lQGs8TL_NTV3lqtf5Qd_LCu/edit?usp=sharing&ouid=103417537513242022386&rtpof=true&sd=true

Describe it in a tweet

Nadia is an AI teaching assistant that adapts learning to each student's needs, helping those who need more time and challenging those who are moving fast. A personalized education to maximize everyone's potential and ensure inclusion, equity and quality.

Innovativeness

Our innovation lies in offering an adaptive and personalized learning tool designed for high school students, which accelerates their academic progress while respecting their unique rhythms, styles, and needs. Unlike the traditional homogeneous approach, our solution uses artificial intelligence to continuously assess student performance, adjusting content in real time to provide tailored learning: those with difficulties receive specific support and exercises focused on their areas of improvement, while more advanced students face challenges that stimulate their potential. This approach fosters autonomy, improves learning retention, and reduces inequalities by ensuring that each student progresses according to their abilities without being left behind or limited by a rigid system. By transforming secondary education towards an inclusive and dynamic model, our tool empowers young people, better preparing them to face the challenges of the future and achieve their maximum academic and personal development.

Transferability

To kickstart Nadia, we would initially focus our efforts onto one subject, e.g. on math, and to be rolled over to other subjects as the absorption from students naturally evolves.

We envisage the platform to be scaled up to most European countries as in a way to give high school students the opportunity to more easily engage with other cultures within a digital ecosystem

Sustainability

We aim to launch a pilot in a handful of schools (ideally in different countries), to explore different learning experiences and adoption.

In the mid-term, we aim to escalate the platform nationwide across one specific country and review the quantitative and qualitative scores of students and teachers enhanced by Nadia.

In the long-term, Nadia to become the "go-to" platform for teachers to assign students for specific content. It will serve as a tool to boost class engagement as students will be much better prepared to attend classes and feel more confident to participate and debate in class as they have the appropriate base knowledge

Team work

We are a group of 3 members with a diverse background:

- Fabio has a background in engineering and 5 years of experience with Mergers and Acquisitions
- Fiorella is a PhD student in Arts and has extensive experience in visual arts and design
- Max is a student in Political Science, International Relations and Business Analytics

We currently have low experience with the thematic and in principle not planning to continue working as a team in the future

European Commission

Video
(link al Drive)

link drive