GENEVA INTELLIGENCE
STRATEGIC INFORMATION

MONTES ALTI
EDUCATIONAL FOUNDATION
SWITZERLAND

EVOLUTION OF EDTECH BUSINESS MODELS

Prospective monitoring
December 2021
by Geneva Intelligence

Summary of the December 2021 Edition

Definition of Edtechs

Methodology

Trend analysis

DigitOwl is a company that organizes workshops on the theme of digital technology in schools. The workshops offered by DigitOwl have the particularity of being screen-free.

Vividbooks is a start-up providing interactive digital textbooks using augmented reality technologies to facilitate the learning of science and technical subjects.

Dartef is an online platform offering games / experimentation tools that allow students to discover real-life applications of mathematical concepts learned in class.

GrowPlanet is a 3D gamified blended learning environment allowing young students to develop their knowledge on sustainable development and environmental issues.

MATHia is a pedagogical platform using artificial intelligence techniques whose ambition is to contribute to the love of mathematics for students in cycle 2 (6 to 9 years old).

Definition of Edtechs

Definition of Edtechs :

The acronym EdTech is short for Educational Technology. **EdTech represents the use of new technologies to facilitate and improve knowledge learning and transmission.**

For example, e-learning provides individual digital training instead of physically attending classrooms. The "classrooms" and MOOCs (Massive Open Online Courses) are lectures broadcast on the Internet. The LMS (Learning Management System) makes it possible to distribute educational content online, including the possibility of offering a complete course. There are also educational robots that capture the attention of young people and accompany them in their learning.

EdTech provides tailor-made and on-demand services. It revolutionises training, making it possible to **design a personalised learning path for students.**

Teachers and schools in general also benefit from these technologies that facilitate the transmission of knowledge in collaboration with their students through participatory and pedagogical teaching. In addition, they use these technologies as **online platforms to better organize, control and monitor learning and adapt their teachings to students.** This allows them to provide more relevant and effective services.

Overall, Edtech benefits students and teachers as well as schools by **facilitating administration and communication.** They improve dialogue, education, learning and above all pedagogy.

Découvrir la méthodologie de veille

Prospective monitoring - Definition

Overview

Prospective monitoring consists collecting strategic information to be able to anticipate changes in the ecosystem in order to respond as soon as possible and adequately. Prospective monitoring provides support for the implementation of a commercial and technological strategy.

Methodology

An effective method is to conduct products and service developments monitoring.
The below steps were taken to carry out the monitoring and illustrate the results:

- Research, analysis and comparison of a dozen innovative offers in the field of Edtech.
- Identification and understanding of the commercial and technological benefits of these results.
- Identification of Edtech trends and innovations. Trends represent market characteristics and developments.

Objectives

For a company or an educational institution to be sustainably competitive it needs to be constantly aware of changes in its market in order to either limit potential risks or benefit from these changes. This would involve the following:

- Monitor competitive products and service developments.
- Identify and distinguish innovative trends and strategies over the long term.
- Analyse and compare this information with the organisation's current strategy.
- Evaluate competition and their business strategies through their innovations.
- Carry out a self-evaluation and develop a strategy.
- Find inspiration in the business and technological trends.

DISCOVER EDTECH TRENDS ANALYSIS

Edtech Trends Analysis

Main technological trends

Represent **opportunities** or **threats** for the various players in the sector

- **Artificial Intelligence**
- **Learning Analysis**
- **Big Data**
- **Voice recognition**

Holon IQ

HolonIQ has posted its online global education **landscape**. The company offers a **mapping** of innovations in learning.

HolonIQ defines its sector mapping:

"Our Global Landscape 2021 is an **open source education taxonomy**, providing **a structure and common language** for identifying, tracking, and **making sense** of the volume and complexity of innovation in the education sector globally."

Important news

Google invests in MATHPRESSO

The companies hope to create synergies with the goal of global expansion for the start-up

Start-Up BrightCHAMPS raises **USD63 million**

*Valuing the young Austrian company at **USD 500 million***

After a little more than a year of existence

acquires the company

*For a sum of approximately **USD100 million***

And continues its expansion strategy

TARGET GLOBAL invests in the start-up lepaya

*As part of its **USD 47 millions** Round B investment*

Discover the analysis of Edtech trends

DigitOwl: Digital workshops without screens

DigitOwl is a company that organizes thematic workshops on digital topics. The proposed workshops are varied: programming, robotics, creation of video games, drone piloting, etc. The objective of these trainings is not to train future technicians but to sensitize the youngest to the developments related to new technologies. Their method has the particularity of not using screens.

Type

Organization of workshops promoting the learning of new digital technologies.

Competitive advantage

Offers a turnkey solution to training institutions to provide training related to the new digital professions.

Price

The rates are tailor-made:

E-learning and notebooks: 60 hours of lessons per year for EUR 250 per class

Face-to-face workshops: EUR 50 per day per student

Number of users

100,000 students trained in over 40 schools by the end of 2021

Level of development

The company was founded in 2017 by Maryline Perenet, a former financial consultant with a passion for education. The start-up now has 35 employees and is supported by the "123 IM" incubator to accelerate its development.

Their goal is now to increase their presence among users and develop their educational resources made available on different channels.

Link https://www.digitowl.school/

How does it work?

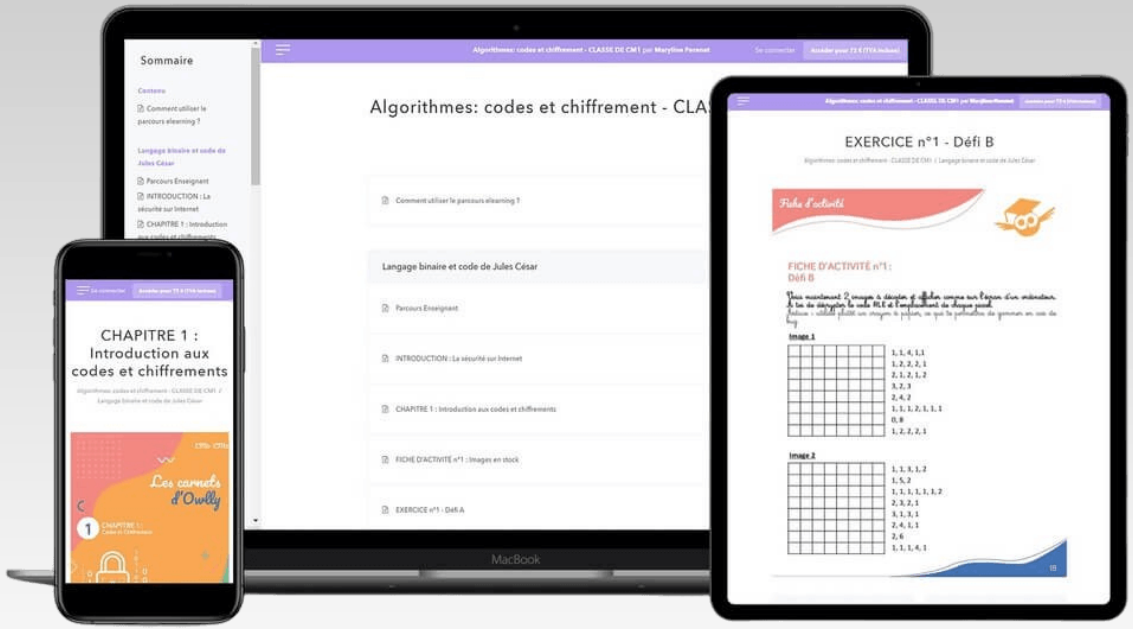
First, the educational institution contacts DigitOwl to organize workshops on the themes of its choice. Speakers will then come to the school to conduct the workshop.

The institution can also request access to digital or physical educational resources. Students have the option of registering for extracurricular workshops that will take place in predefined training locations or online.

DigitOwl: Digital workshops without screens

Benefits

- Turnkey solution to introduce learners to the digital world and to current and future skills and technologies.
- Online platform providing educational resources (workbooks, learning manuals, crafts, exercises, etc.) that can be used by teachers outside of workshops.
- Provision of notebooks and tutorials to learn about the digital world.
- Training using an "unplugged" method, i.e. without screens or digital equipment.
- Organization of workshops in class in accordance with the school program.
- Organization of workshops for specific groups by videoconference on several themes outside of school time.



Suitable for:

Kindergarten ★★★ Primary school ★★★★ High School ★★ University ★

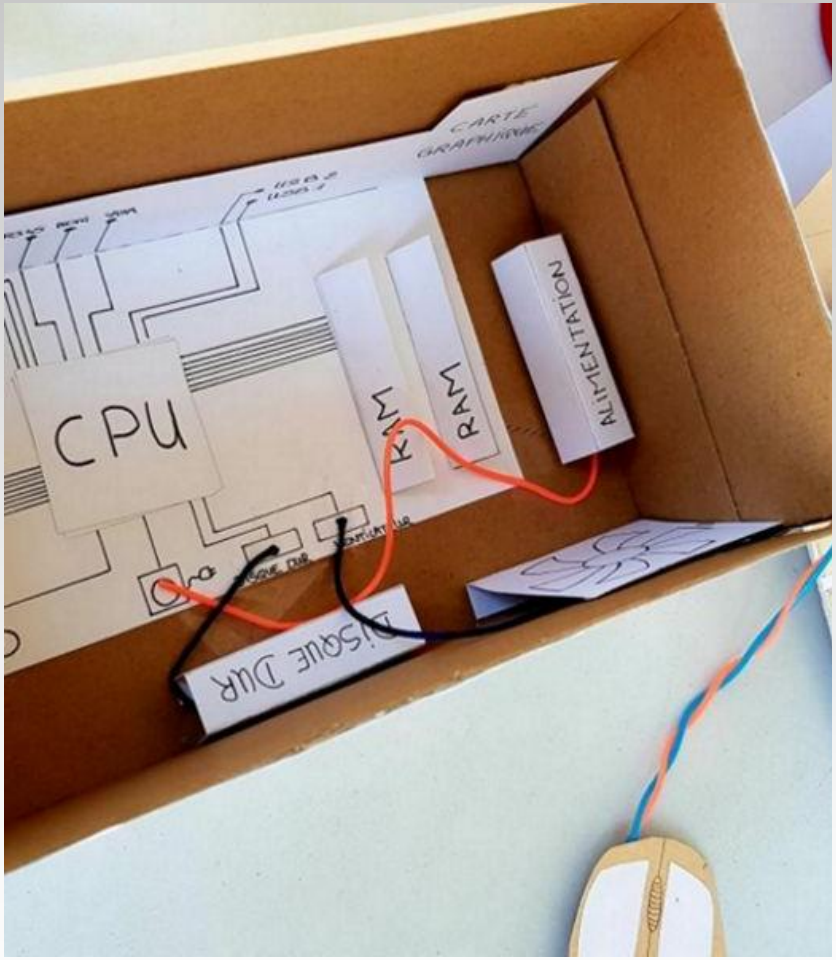
DigitOwl: Digital workshops without screens

In the school context, the organization of DigitOwl trainings on the digital theme complements the skills taught by the teachers and reinforces the attractiveness of the institution for three reasons in particular:

- **The early introduction of students to the digital world is crucial for their academic learning** and their professional future. Indeed, it is estimated that 85% of jobs in 2035 do not yet exist and that a large part of them will be linked to the digitalization, automation and robotization of our society. Preparing young students to understand the stakes and how these technologies work is therefore essential for students and schools.

- In an **ultra-connected environment**, **using a screen-free method is a breath of fresh air for students as well as parents concerned about their children** not being exposed to tablets and computers at a very young age.

- The young company offers the possibility to **access quality educational resources online** or in **the form of textbooks.** These resources have been designed to provide students with the knowledge of basic concepts with flexibility of use. These various formats allow teachers to have more pedagogical freedom.



However, the solution has several limitations:

- Face-to-face extracurricular workshops are only organized in a few French cities. Thus, students living outside of these cities have access to extracurricular workshops only by videoconference, and **must therefore have an internet connection and the necessary computer equipment.**

- There are many benefits to using the screen-free method. However, it is also important that students **get used to the usual computer equipment** (keyboard, mouse, tablet) relatively quickly. In a logic of digital training, the school institution is **therefore obliged to invest in computer equipment.**

Dartef: Discovering the real applications of mathematics

Dartef is an online platform offering games / experimentation tools allowing students to discover real applications in digital or physical form of the mathematical concepts learned in class.

Type

Platform for learning the possible applications of theoretical mathematical concepts learned in class.

Competitive advantage

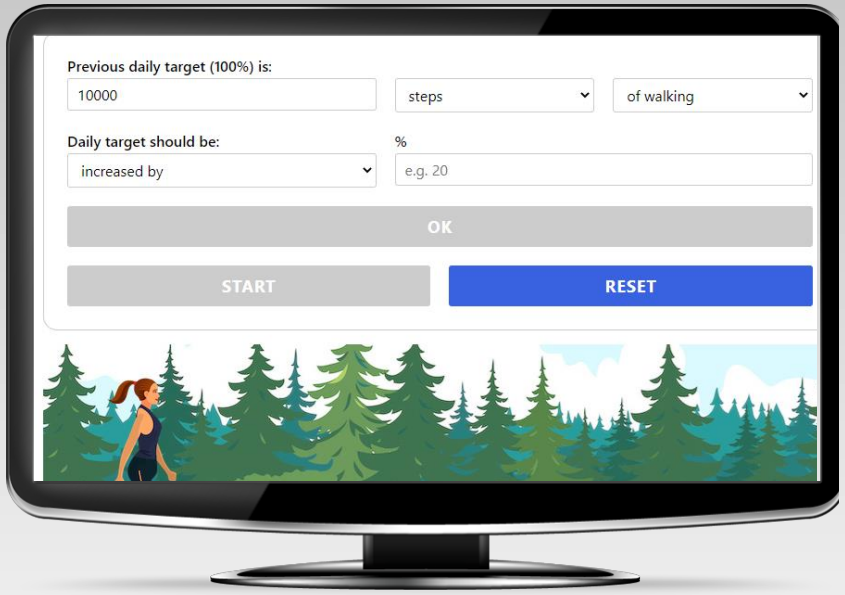
The company offers fun, easy-to-use activities that provide real added value in learning technical concepts.

Level of development

Dartef was founded by Roman Kaurson, a graduate in educational innovation from the University of Tartu in Estonia.

The start-up was selected in 2021 by the IMPACT EdTech incubator and gas pedal co-founded by the European Commission to accelerate the development of innovation in education.

A first pilot test was carried out from March to May 2021 in 7 classes and brought very good results regarding the pedagogical usefulness of the platform. A second larger scale pilot is currently being prepared.



How does it work?

Dartef offers two categories of experiments: digital and physical.

The digital experiments are entirely online via their platform. Each experiment is categorized according to the related educational subtopic. Teachers and students can also access instruction sheets for the experiments for free. Additional tutorials can be obtained by contacting the publisher directly.

For physical experiments, the company offers manuals or videos that allow students and teachers to build tangible devices themselves. Educational institutions can contact Dartef directly to receive the desired devices by post.

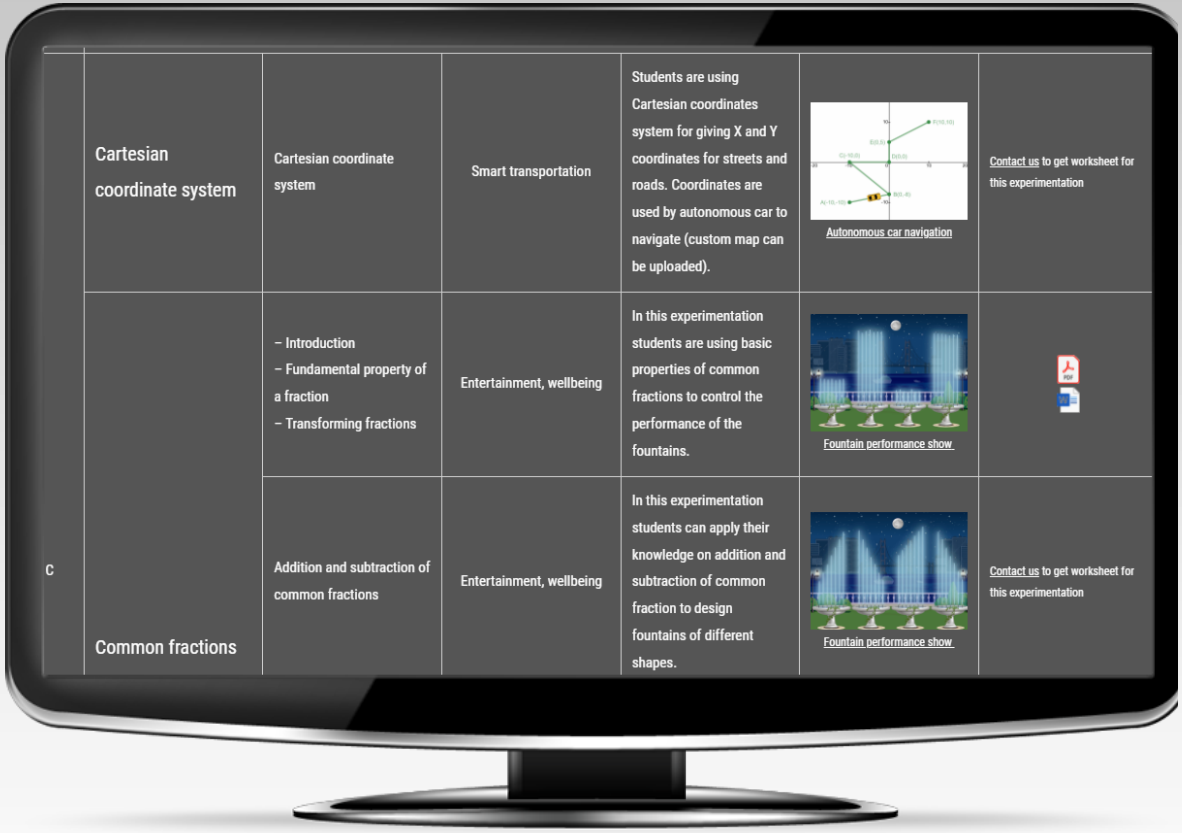
Link https://dartef.com/

DARTEF
Advanced Knowledge

Dartef: Discovering the real applications of mathematics

Benetifs

- Easy to use platform.
- Playful experiments in which theoretical concepts are used in real-life situations.
- Clear categorization of experiments by subject, chapter and subchapter studied.
- Experiments proposed in a digital but also physical way guaranteeing a flexibility of use.
- Possibility to order models or to download tutorials to build them in class.
- Possibility to download a large number of worksheets with answers related to the experiments to support the pedagogical work of teachers.
- Large number of experiments already covering most of the mathematical concepts studied in compulsory school.



	Cartesian coordinate system	Cartesian coordinate system	Smart transportation	Students are using Cartesian coordinates system for giving X and Y coordinates for streets and roads. Coordinates are used by autonomous car to navigate (custom map can be uploaded).	Autonomous car navigation	Contact us to get worksheet for this experimentation
C	Common fractions	– Introduction – Fundamental property of a fraction – Transforming fractions	Entertainment, wellbeing	In this experimentation students are using basic properties of common fractions to control the performance of the fountains.	Fountain performance show	
		Addition and subtraction of common fractions	Entertainment, wellbeing	In this experimentation students can apply their knowledge on addition and subtraction of common fraction to design fountains of different shapes.	Fountain performance show	Contact us to get worksheet for this experimentation

Suitable for:

Kindergarten ★

Primary school ★★★★

High School ★★★★

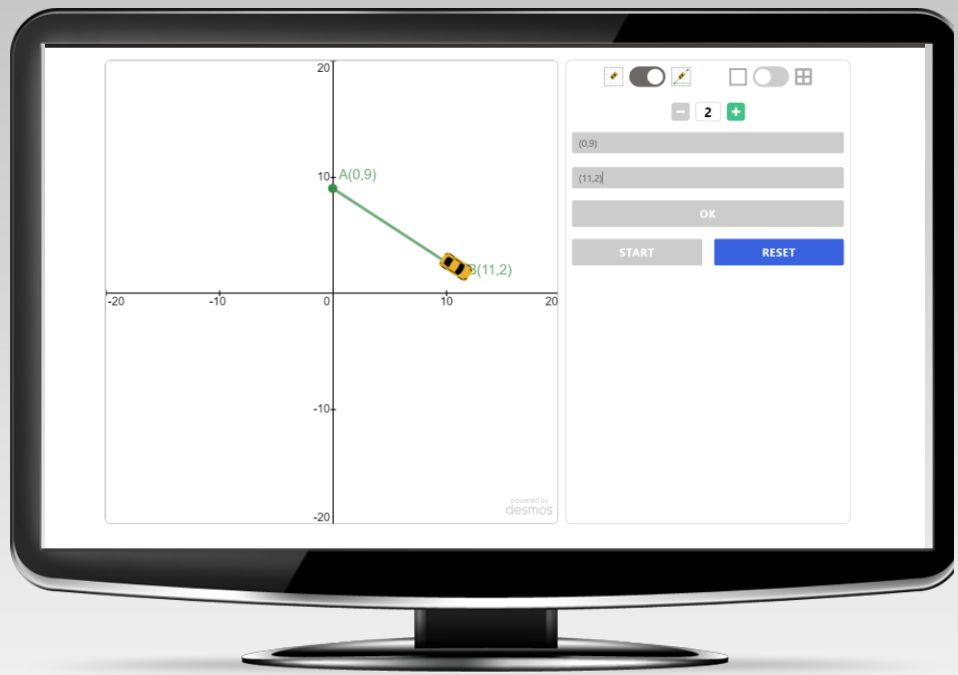
University ★★★

DARTEF
Advanced Knowledge

Dartef: Discovering the real applications of mathematics

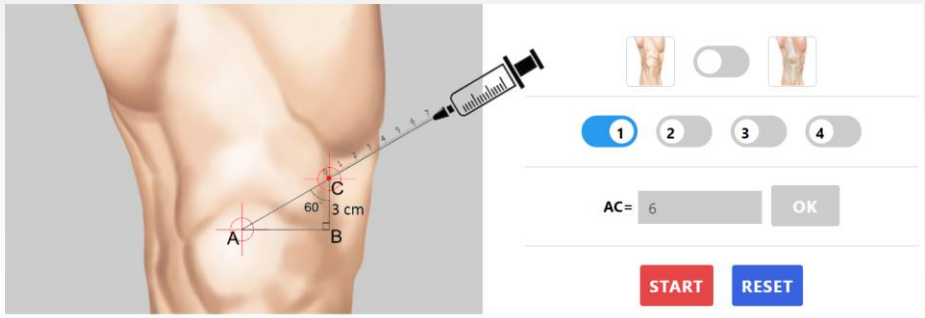
As a platform offering insight into real-world applications of mathematical concepts learned in the classroom, Dartef has certain advantages:

- As mathematics is often a **cause of difficulty** for many students, especially because of its abstract dimension, the platform is a **pedagogical tool to enhance student engagement.** Physical experimentation with mathematical concepts offers students the opportunity to greatly **deepen their understanding** of theoretical concepts and also to **develop their mathematical intuition.**
- By giving examples of **practical applications** of sometimes abstract theoretical concepts, the use of the platform brings a **real added value in the teaching of mathematics** by the teachers.
- Parents may decide **to enroll their children** in schools offering these types of platforms to **specifically strengthen their math skills.**



However, this tool can be improved on several aspects:

- The platform's website must improve **its ergonomics and aesthetics** in order to improve its educational results.
- The proposed experiments are sometimes **difficult to understand** and not **very meaningful.** An effort of popularization must be made in order to speak to all the students.
- The instruction and exercise sheets proposed as a complement to the experiments are **relatively complete and interesting**, but the **layout** should also be improved to **facilitate student understanding and engagement.**



VividBooks: Textbooks in augmented reality

Vividbooks is a start-up providing interactive digital textbooks using augmented reality technologies to facilitate the learning of science and technical subjects.

The company offers more than 130 educational resources including interactive animations, a lesson summary and a teacher's guide. The goal of these textbooks is to increase engagement and attention in the classroom.

Type

Interactive textbooks for engaging science learning.

Competitive advantage

Very graphic, easy-to-use resources that allow students to learn individually while maintaining their attention.

Level of development

The company is founded in 2019 by Vitek Skop, Visual Designer and Daniel Ondrasek, Business Development Consultant. VividBooks consists of a team of 9 employees. In 2020, the startup was selected by the European gas pedal and incubator "Impact EdTech". VividBooks continues to develop new textbooks as well as translate existing ones.

Number of users

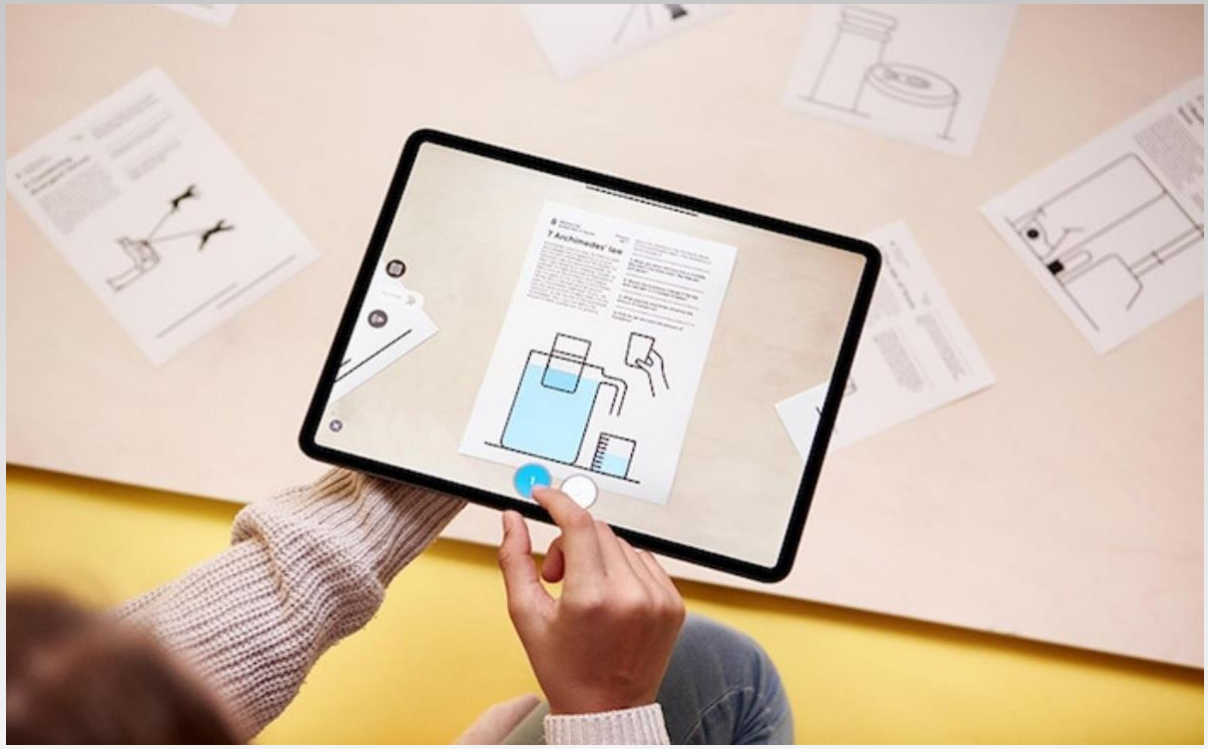
No information was found on this subject.

Price

EUR 613 per year for a school with 1 to 300 students.

EUR 787.5 per year for a school with more than 1,000 students.

Link https://www.vividbooks.com/



How does it work?

Institutions receive access to the VividBooks platform containing the various textbooks divided by subject and chapter. Each chapter contains several lessons that can be followed in any order.

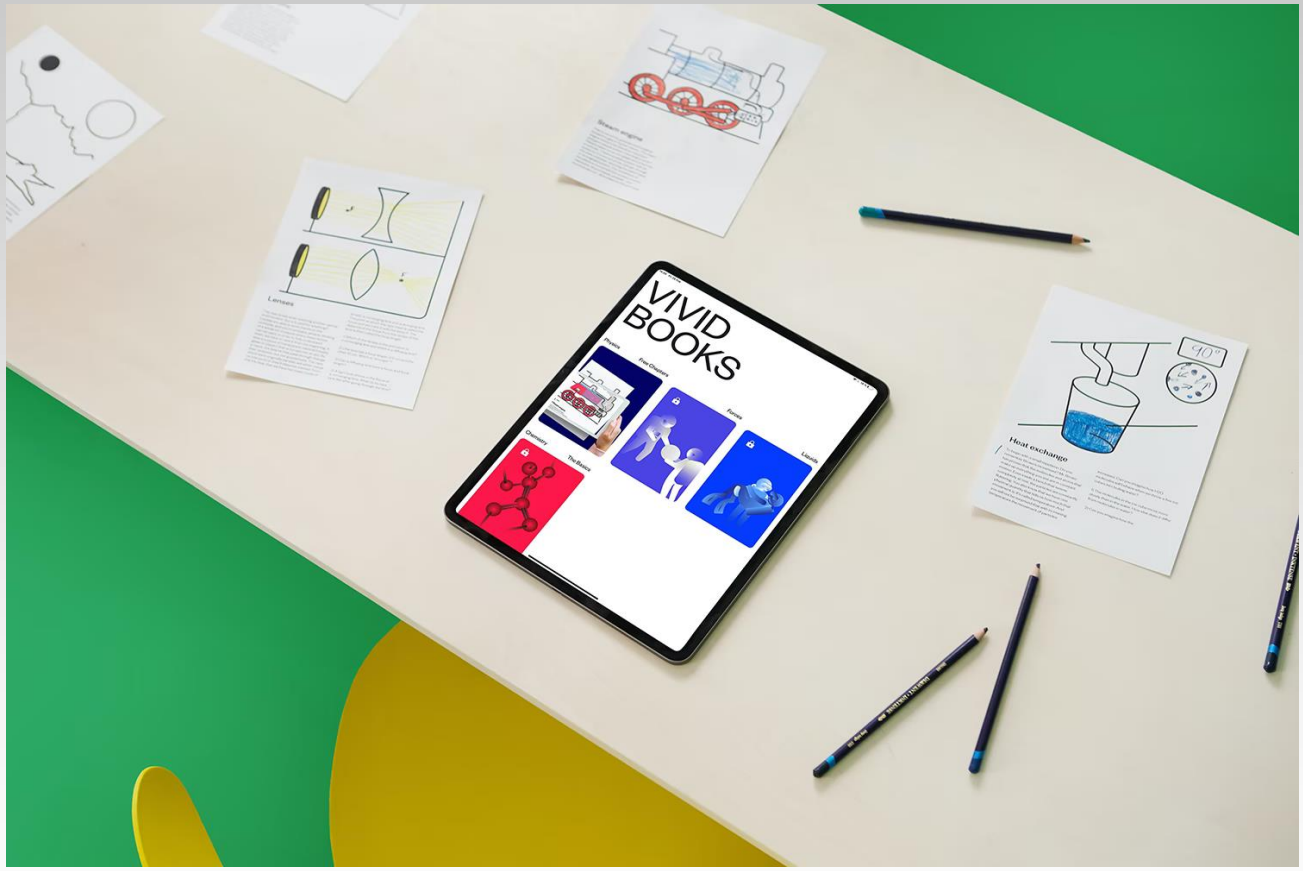
The lessons are based on animations, accompanying texts and questions that students can answer. The objective of this tool is to introduce students to important concepts while letting them learn on their own in an effective way through a fun, dynamic and interactive medium.

VIVID BOOKS

VividBooks: Textbooks in augmented reality

Benefits

- Adding an interactive and playful dimension to traditional textbooks.
- Sober and worked visual aspect making the reading easier and the matter more easily understandable.
- Use of augmented reality techniques to illustrate concepts and keep the user's attention.
- Lighter text and graphic demonstration of concepts for more visual learning.
- Active-learning dimension to increase learners' engagement and understanding of scientific concepts.
- The platform integrates and facilitates distance learning. Possibility to easily redirect to a lesson through a web link.
- Teacher guides are provided with each lesson.



Suitable for:

Kindergarten ★★★

Primary school ★★★★

High School ★★★★

University ★

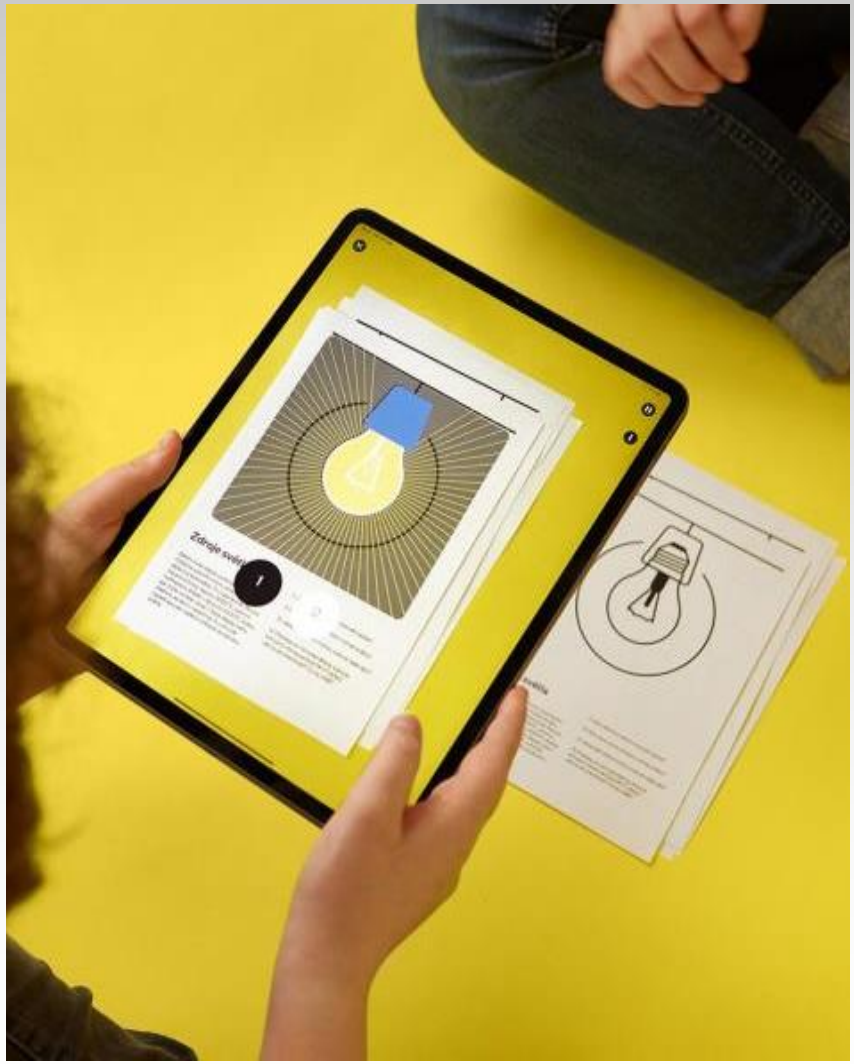
VIVID BOOKS

VividBooks: Textbooks in augmented reality

VividBooks are textbooks that integrate augmented reality and Active Learning to increase student engagement and understanding of science subjects.

The solution has significant advantages for a school:

- By using augmented reality, learners can have a **direct visual demonstration of the theoretical concepts** studied in class. This tool improves teaching by **saving time for students and teachers** because a real demonstration that is often time consuming and requires equipment is no longer necessary.
- Thanks to their **very visual and uncluttered look,** VividBooks textbooks offer a superior reading quality to "traditional" textbooks, facilitating the transmission of knowledge. This graphic dimension is all the more important for **students** who have a better **ability to learn visually.** These interactive textbooks demonstrate the **modernity of a school**, which can help it in terms of **image and reputation** with students and their parents.
- The content of the lessons already developed by the start-up provides **pedagogical support** to the teachers who can thus vary the subjects but especially the formats to address all the students according to **different teaching approaches.**



However, the solution could be improved in some aspects:

- For the moment, the solution only offers textbooks for certain science subjects. **An extension to other subjects** could be very appreciated by teachers and students.
- The educational resources offered by VividBooks are currently only available in **English and Czech**. As their road-map is not clearly communicated, it is currently impossible to know **if the company plans to develop other languages in the near future.**
- Augmented reality demonstrations require the **use of SmartPhone, Tablets, SmartBoard or computers,** requiring investments. It is possible that some educational institutions are reluctant to allow students to use these tools.

GrowPlanet: Protecting the environment in a 3D world

GrowPlanet is a gamified blended learning environment allowing young students to develop their knowledge on sustainable development. Students are immersed in a 3D world in which they can access missions focused on sustainable development, all supervised by teachers.

Type

Video game environment to develop knowledge of sustainable development.

Competitive advantage

The platform is very playful, the environment is in 3D and the games are well thought and realized.

Price

Class up to 35 players: from EUR 99 per year

School: from EUR 450 per year

School institution: Price on request

Number of users

The platform has already been used in 80 classrooms (1,600 students) and the company has 5 commercial customers.

Level of development

GrowPlanet was founded in 2018 in Sweden by Kristian Lundquist, an entrepreneur and education expert. In 2021, the company had about 20 employees. The environment were tested in several schools in Europe via the Swedish EdTest program. GrowPlanet has recently developed an English version which has accelerated its development.

Link https://growplanet.se/

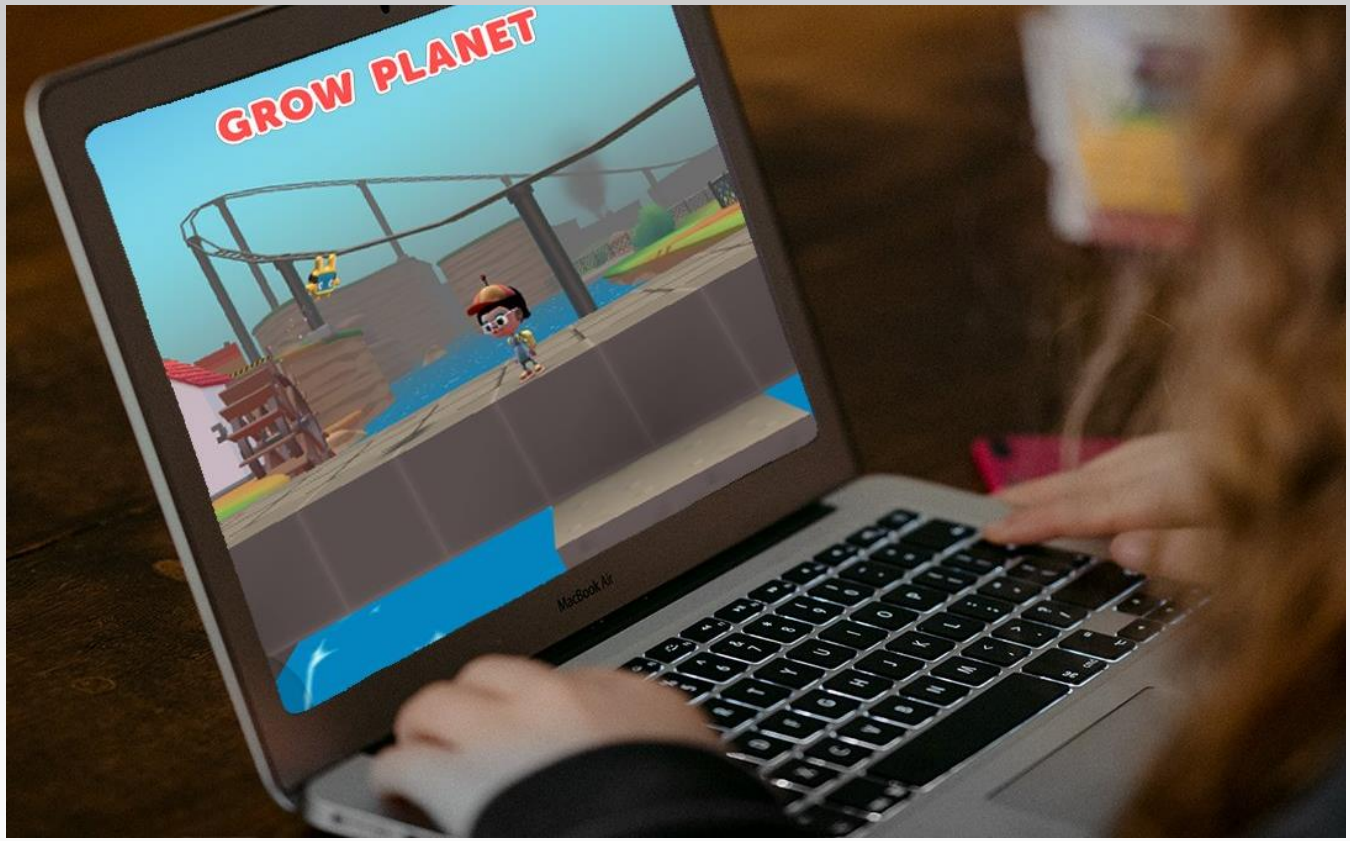
How does it work?

The student is immersed in a 3D world in which they can move around and carry out missions that are entrusted in the form of mini-games (repairing a wind turbine, supporting an organic farm, sorting waste, etc.) but also discover various information on the environment and its protection. The teacher can set the environment accessible to students by closing access to certain areas of the map for example.

GrowPlanet: Protecting the environment in a 3D world

Benefits

- Immersion in a video-game environment to increase learner engagement.
- Awareness and understanding of the main current and future environmental issues and potential solutions to these issues.
- Develops the ability to solve problems in a context based on real-life situations.
- Learning through play allows the student not only to take on the role of a listener but also that of an actor.
- Access to a dashboard that allows teachers to easily track student progress and block or open areas of the map in order to guide students on their journey.



Suitable for:

Kindergarten ★ Primary school ★★★ High School ★★★★ University ★

GrowPlanet: Protecting the environment in a 3D world

As a solution for students to develop their knowledge of today's key environmental issues, GrowPlanet has many benefits for educational institutions:

Awareness of environmental challenges is essential for the younger generation and must be part of the **education provided by a school.** It is imperative that these institutions promote **climate action to facilitate the transition** to a more sustainable society. Therefore, this attention is also a way to demonstrate the **school's commitment to sustainability.**

The **gamified and immersive aspect** offers a more **playful** and **interactive** learning experience. The graphics of the 3D environment are well done making the mini-games **attractive** and the environment **pleasant** to explore. This platform can be a reward for students who have done well, which is a **potential educational tool** for teachers.

Students can explore **independently** which gives teachers time to give **deeper explanations** to students who need them on the topic of **sustainability** or other subjects.

However, the solution has certain limitations:

Using the GrowPlanet environment in an educational context requires that **computers** or **tablets** are available. If the institution does not have this equipment or has too few of them, the **gaming experience** will be **poorer** for the students.

Young students are generally already **too exposed to screens and tablets.** This is why it would be advisable to use this type of solution in **moderation** by regularly **evaluating** the time spent **in front of the screen.**

mathia
Mathématiques et Intelligence Artificielle

MATHia: Developing Mathematical Skills with AI

MATHia is a pedagogical platform whose ambition is to contribute to the love of mathematics for students in cycle 2 (6 to 9 years old).

The platform has been co-constructed with hundreds of teachers and thousands of students in partnership with the French Ministry of Education. The solution is also based on an artificial intelligence solution that adapts the level of the questions to the needs of the learners.

Type

A playful training platform for learning mathematics.

Competitive advantage

The solution offers an ergonomic interface as well as a sophisticated design. Moreover, the exercises are adapted to the level and needs of the learners.

Level of development

The MATHia project was launched in 2016 by French entrepreneur Paul Escudé. The start-up employs 11 people and has been selected by the Parisian incubator "Numa" in 2021. The platform is a winner of the Partnership for Artificial Intelligence Innovation (P2IA) of the French Ministry of Education for the mathematics package.

In 2021, the independent American institute Saga Education conducted a study testing 5 adaptive-learning platforms in which MATHia obtained the best results.

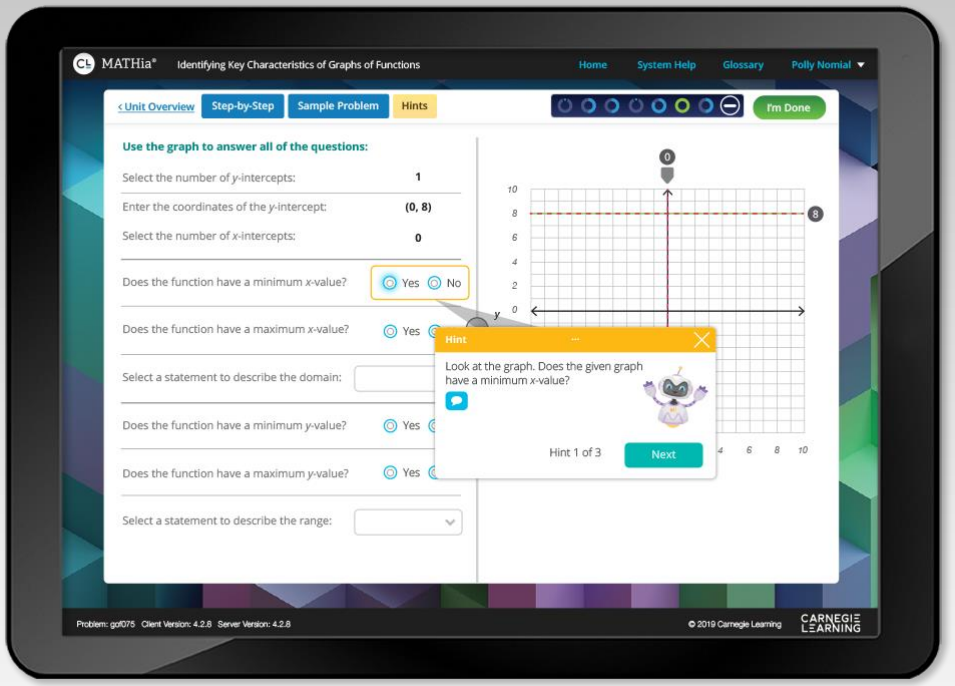
Number of users

The platform is already used by more than 500,000 schoolchildren in their math classes.

Price

No relevant information was found on this subject.

Link https://mathia.education/



How does it work?

Students have access to a platform containing mathematical exercises in the form of mini-games. They are accompanied by "Mathia", a little character who will be their partner throughout their learning process and who will offer them a personalized course.

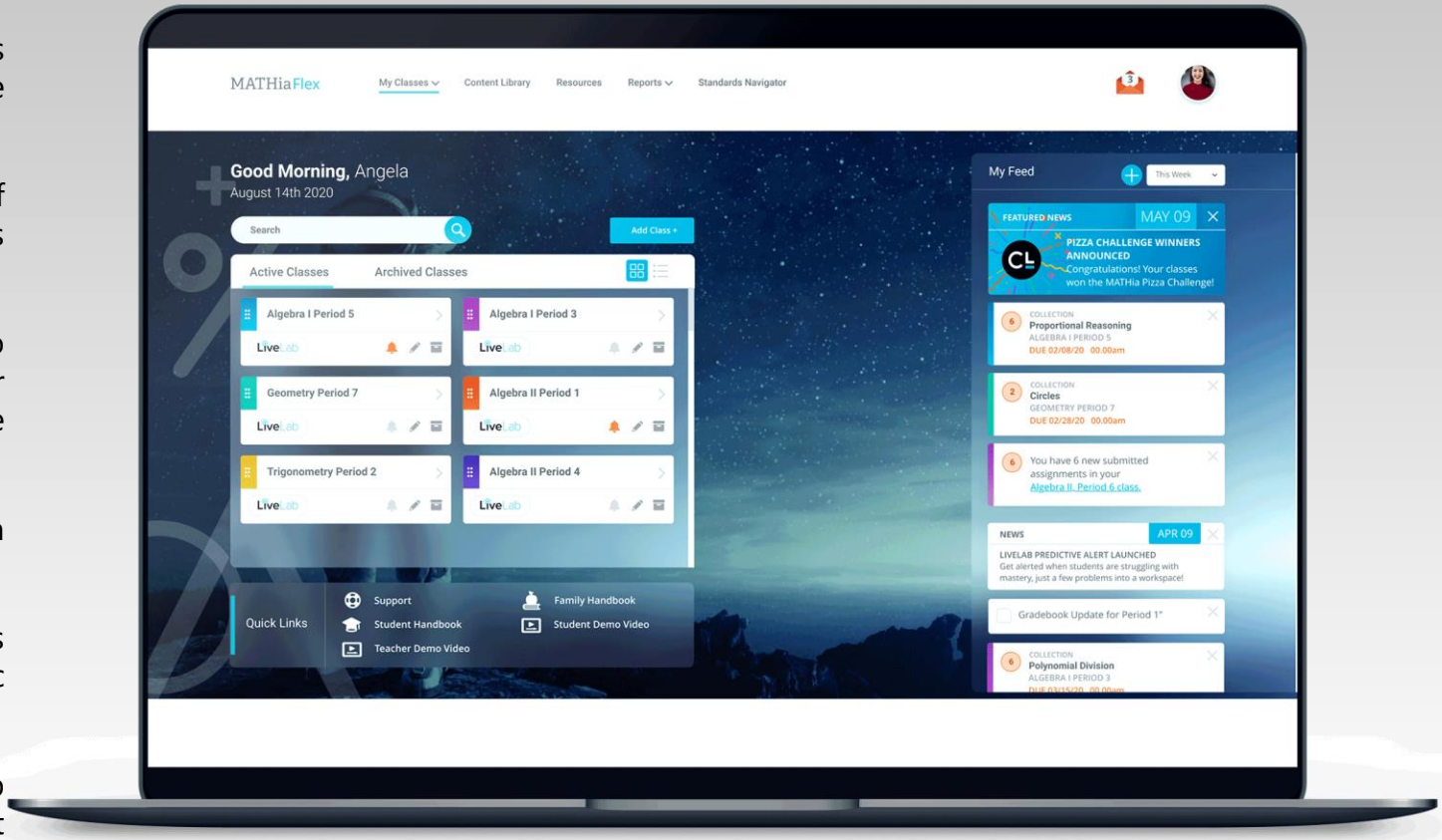
The teachers have access to a dashboard allowing them to control the evolution of the students and to identify the possible themes on which a student has more difficulties.

mathia
Mathématiques et Intelligence Artificielle

MATHia: Developing Mathematical Skills with AI

Benefits

- Proposed gamified exercises and visuals adapted to young students making the course fun and engaging.
- Adaptation of the exercises and the level of questions to the needs of the students using artificial intelligence methods.
- Access to a dashboard that allows you to monitor the learning of the entire class or of specific students and thus control the activities of the learners.
- Covers a large portion of the Cycle 2 math curriculum (ages 6-9).
- Presence of a virtual companion who gets to know the students and their specific needs during the learning process.
- The platform also allows for small group exercises that encourage the development of a collaborative spirit.



Suitable for:

Kindergarten	★	High School	★★★
Primary school	★★★★	University	★★

mathia
Mathématiques et Intelligence Artificielle

MATHia: Developing Mathematical Skills with AI

MATHia is a playful platform that aims to improve the learning of mathematics by using artificial intelligence methods.

The solution has significant advantages:

- Exercise-based learning in the **form of games** has a beneficial effect on **student engagement**, let alone teacher instruction.
- Thanks to its **intuitive interface,** it is possible to let the students **navigate freely** and **proactively** in the platform and thus develop their knowledge of mathematics in an autonomous way. This makes the student **responsible for their own learning** and **saves time for teachers** who can concentrate on other activities in parallel.
- The artificial intelligence methods integrated into the platform will **adapt the training course** to the **needs and difficulties** of the students, thus **optimizing their learning process** and the results of the educational institutions.
- The **access to a dashboard** for teachers allows them to follow the students' learning path as well as to know the **topics** on which they have **ease or difficulties.** The teacher can support the students in the areas where they **particularly need it** and thus make their actions more effective.

However, the use of the platform can cause some problems:

- The platform is for the moment intended for a **rather young public** already **too exposed to screens and tablets.** Therefore, many parents and teachers might be **reluctant to use digital solutions.**
- Like any solution based on automation and AI, MATHia can **encounter technical problems** related to a concern in the processing of data or in the parameterization of the technology.