







# EVOLUTION OF EDTECH BUSINESS MODELS

Prospective Monitoring March 2021 by Geneva Intelligence





## Summary of the March 2021 Edition



Definition of Edtechs



Methodology





**Classcraft** turns lessons into a roleplaying game to engage students in their learning, foster their collaboration and make classroom management easier for teachers.

**Živi** 

**Vivi** is a wireless presentation tool that allows teachers and students to share, display, annotate, capture and record information in real time from any application and computer equipment in a classroom.



**Datalumni** is a turnkey solution for creating and managing an alumni network.



**Squirrel AI** is an adaptive learning platform that uses artificial intelligence and advanced algorithms to provide students with a personalised learning plan.



**Eneza** is a learning platform that offers homework revision materials for primary and secondary school pupils via SMS and the web.





## **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.

DISCOVER MONITORING METHODOLOGY





## **Definition of Prospective Monitoring**



#### **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**

After a relaxing Easter holiday with his family in Villars, where he was able to enjoy the last snow of the year, Léon returned to school, a little sulky, knowing that he would not be entitled to any more holidays until this summer.

As Léon enters the Classroom slightly late for the first back-to-school French lesson, he immediately notices something different. His teacher, Minerva, and his classmates are already deep in the lesson, even though the class has only been going on for two minutes. Minerva explains with a smile that during the holidays the school has installed the VIVI system, a wireless presentation tool that allows teachers and students to share information in real time, from any device in the classroom. The whole system is wireless and saves precious minutes in setting up the computer equipment needed for the course and thus respecting the school curriculum. "You can't stop progress," Léon grumbled before looking at his grammar exercice that Minerva shared on his tablet

After two hectic hours devoted to the language of Molière comes the History class taught by Albus, a longbearded teacher with half-moon glasses. "Take out your tablets" roars Albus! "Five points from Léon for being late for Minerva's class this morning!".

Léon sighs and explains to Mathilda, a new student, that the history class is actually a role-playing game, thanks to the **Classcraft** solution. Albus has turned his class into a video game and acts as a game master, awarding or subtracting points according to the students' academic achievements and behaviour in class. Positive actions such as answering a question or helping a classmate can earn Léon and his team points, while misbehaving or being late loses points. Students with the most points can acquire 'powers' such as being able to eat in class, change seats during a lesson, or listen to music for a few minutes. On the other hand, students who lose points can be given detentions, punishments (such as copying lines) or extra homework. "This system keeps us motivated and gives us a new educational experience", Léon mischievously tells Mathilda. "5 points to Léon for introducing Mathilda to the course!", says Albus as he launches the quest of the day: the adoption of the new federal constitution in 12 September 1948.



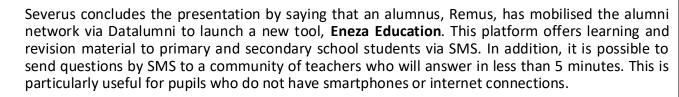






## **Edtech Trends Analysis**

After a quick lunch in the school dinning hall, the afternoon began with the presence of an alumnus, Severus, who presented the new platform adopted by the school, **Datalumni**, designed to host and animate the alumni network. This tool provides all the services that alumni can expect (employability assistance, coaching-mentoring, networking, professional and academic careers of alumni, etc.) and allows Léon's school to capitalise on its alumni while enhancing the credibility of its diploma and its training courses.



After a particularly exhausting day at school, Léon returns to Lausanne by the Inter Regio train that he loves so much (read about Léon's railway travels in the previous edition). Once at home, Léon connects to the **Squirell AI platform**, an adaptive learning platform which, thanks to artificial intelligence and advanced algorithms, provides him with a personalised learning plan and individual tutoring. Léon is thus able to revise the notions he lacks in French and history via videos, a medium he particularly appreciates. This is not necessary the case for all his classmates, but the platform offers other solutions as well.





As he drifts off to sleep and recalls the day's technological discoveries, Leon reflects on the future innovations that Albus and Minerva will come up with after the summer holidays to create new educational experiences and make the school day even more fun and interactive.

DISCOVER CLASSCRAFT





## **Classcraft: Making school learning epic**

Classcraft is a motivational management system that uses gamification, particularly role-playing, to engage students in their learning, foster collaboration and make classroom management easier for teachers.

#### Туре

A tool for knowledge acquisition and classroom management through gamification.

#### **Competitive advantage**

The solution transposes the teacher's course into a role-play and a quest.

#### Price

The solution is based on a freemium model. The basic functionality of the solution can be used free of charge, while the more advanced features will require a professional subscription for USD 120 per year.

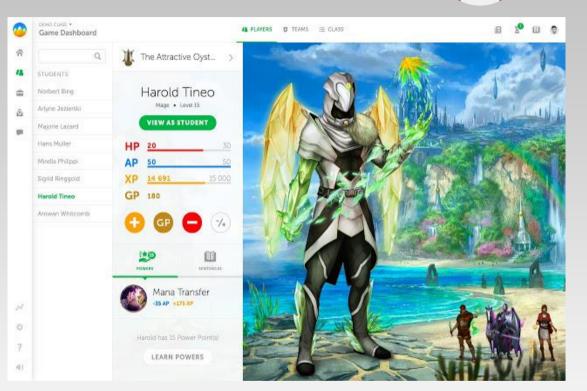
#### Number of users

By 2019, more than 6 million students and educators were using the system in over 160 countries and in 11 languages.

#### **Stage of development**

Classcraft was founded in 2013 by Shawn Young, a physics professor in Quebec. The company raised over USD 4.5 million in March 2021 to accelerate product development, sales and marketing efforts. The company will also expand its team in order to establish partnerships within the Edtech community.

Link https://www.classcraft.com/fr/



#### How does it work?

Students each choose a character that they can personalise and form teams. The teacher acts as a game master and awards or subtracts points according to their academic performance and behaviour in class. The teacher interacts live on a screen in front of the class.

Positive actions such as answering a teacher's question or helping a classmate can earn students and their team points, while misbehaving or arriving late can make them lose points. Students with the most points can acquire "powers" or "skills" such as being able to eat in class, change seats during a lesson, or listen to music for a few minutes. On the other hand, those who lose points may be given a detention, a punishment (ie. copying lines) or extra homework.



## **Classcraft: Making school learning epic**

#### **Advantages**

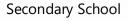
- Reinforce students' motivation in their learning through gamification and role-playing.
- Class management features developed (comments and feedback on students' work, time and instructions for an activity, etc.)
- Pedagogical differentiation (adapting teaching to the levels and abilities of students) is encouraged by allowing each of them to progress at their own rhythm.
- Concrete consequences in the game (loss or gain of points and powers) encourage students to adopt positive behaviour.
- The collaborative dimension encourages the principle of student accountability since a loss of points or the death of a student character penalise the entire team.
- The rewards and "malus" are fully customisable by teachers.
- The game experience can be extended into other real-life activities. Participation in school sports events, for example, can earn points in the game.
- The solution can be coupled with different digital solutions such as Google Classroom, Microsoft Office or Clever.

#### Suitable for:



Primary school







University





## Classcraft: Making school learning epic

Classcraft turns traditional lessons into a role-playing game through quests and offers several advantages for teachers and schools:

- Teachers can use this tool to **offer a new educational experience** to their students and maintain a high level of motivation in their learning. In particular, it can help students who are dropping out of school or who are particularly shy to engage with the class and interact with their peers.
- Classcraft can also be a tool to reduce distance between teachers and students. It offers a support, a
  common and privileged theme of communication between teaching staff and students, thus favouring
  interactions and the confidence of learners towards their teachers.
- Using Classecraft can also **enhance the school's reputation** that wants to offer the latest technological and pedagogical innovations to its students. Transposing a lesson into a role-playing game is potentially part of this.

However, the solution has several limitations:

- A risks of using this solution is that **students are constantly looking for a gain in their actions or behaviour in class**. It is therefore necessary to constantly "pay" students for their work. The creator of the game mentions in this respect that his students, caught up in the game, no longer wished to tidy their classroom, for example, without benefiting from points that could be used in the game. This risk is particularly problematic from a pedagogical point of view. The "pleasure of learning" can disappear in favour of the desire to develop the skills of one's character and to "win" the game above all.
- The collaborative dimension of the game is both an advantage and a limitation. Individual actions can
  penalise a team and, by extension, create enmity between some students and others that would penalise
  them. This "collective punishment" mechanism, which has advantages in certain contexts and institutions
  (army, team building, etc.), is not necessarily relevant in educational institutions and represents a
  reputational threat for an institution, as parents may criticise this choice.
- The students most motivated by the game may be tempted to improve their character and are then
  encouraged to pay for special equipment or powers, as the solution is based on a freemium economic
  model. This possibility annihilates the solution's pedagogical interest if the character's development and
  improvement are no longer linked to academic merit but to the purchasing power of students and their
  parents. The teacher does not control the whole game.





#### Datalumni: A platform to animate and structure your alumni network

Datalumni is a turnkey solution that makes it easy to create and manage an alumni network.



#### Туре

Tool for the animation and structuring of an alumni network.

#### **Competitive advantage**

The solution offers a turnkey solution for creating and animating your alumni network.

#### Price

The solution is installed at a price of EUR 2,990 plus a monthly subscription fee ranging from EUR 220 to 460 depending on the various features selected and the number of users.

#### Number of users

More than 40 high schools, universities and colleges representing more than 80,000 users are using Datalumni. The company states that 100% of subscriptions to the platform have been renewed.

#### **Stage of development**

The start-up, based in Cran-Gevrier in Haute-Savoie, was created in 2018 by Laura Lize. The company had 7 employees in 2020. The start-up has been awarded several prizes including those of the initiative France network, the O Féminin initiative and the French Tech.

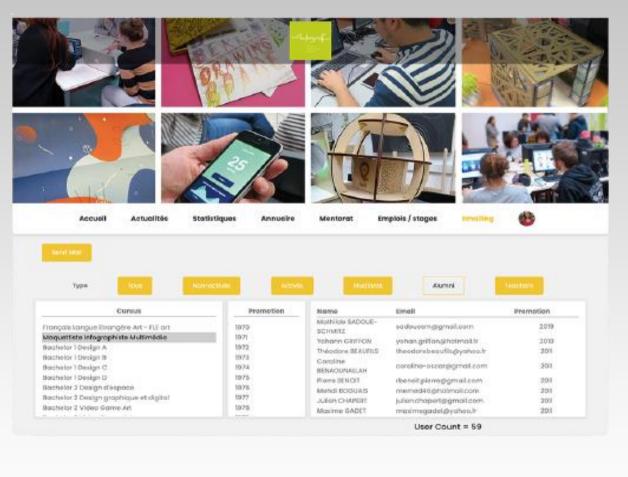
Link https://datalumni.com/



### Datalumni: A platform to animate and structure your alumni network

#### **Advantages**

- Directory with full contact details with filtering according to different criteria (curriculum, employer, location...) and segmentation (students, teachers, companies...).
- Private job board for members to exchange job or internship offers in a preferential way. Each week users receive a notification for the latest job offers from the network.
- Invited companies can post job offers directly on the platform.
- Statistics are available to track students' academic and professional careers. These statistics are displayed on each member's profile and can be exported so that the institution can communicate on opportunities offered by its degree.
- Datalumni includes a blog within the platform so that institutions and alumni communities can communicate. Alumni profiles, event announcements, training courses and job offers can also be relayed via this channel.
- Directory's segmentation and an emailing system allows users to communicate differently according to their profiles and needs.
- Mentoring is offered to each user of the platform. Mentors appear in a specific directory that mentions their availability. Students will only have to search within this directory, through a search engine and filters, for the mentor that best fits their needs.







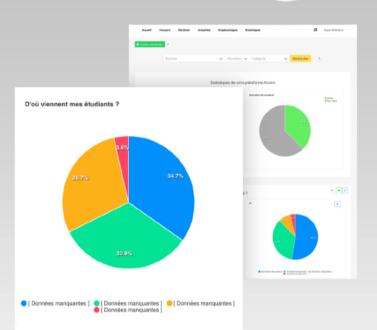
#### Datalumni: A platform to animate and structure your alumni network

Datalumni is a turnkey digital platform for structuring and animating your alumni network. This solution has several advantages for educational institutions:

- The presence of a structured and developed alumni network is one of the ways to attract new students. They are increasingly taking this criterion into account when choosing the institution in which they will study, given the difficulties of entering the job market. The use of a professional alumni management platform such as Datalumni illustrates a school's desire to maintain and structure its alumni network for future students. This is not necessarily the case for institutions with a simple Facebook or LinkedIn page.
- The alumni's needs are not the same across the network. For example, young graduates are more interested in coaching and help with employability and professional integration, while older graduates are more interested in networking and recreational events. Schools and alumni networks will therefore have to offer several services (networking, job offers, tutoring-mentoring...) to their members and segment their communication according to the different needs. Using Datalumni allows educational institutions to host and manage several services, to create communities of interest, to distribute their communication, thus guaranteeing a structured and animated network.
- Datalumni also offers a statistical module to (re)trace the educational and professional careers of students. Schools can use this module to promote the trainings provided and the potential careers or paths offered by its teaching. This gives credibility to the institution's diplomas, thereby enhancing its reputation and attracting new students.

However, the solution has several disadvantages:

- Most students have not completed their entire academic career at the same school, which can make them
  reluctant to connect to multiple platforms from, unlike social networks where one can centralised
  everything through one social account.
- Platforms such as Datalumni are standardised. The interface can be very quickly and easily recognised despite a different graphic charter specific to each institution. This can reduce the "tailor-made" character desired by an institution regarding its alumni network's hosting.
- These platforms, while facilitating the structuring of an alumni network, will not be of much help for its animation. Schools will have to provide human resources to animate their network and communicate in a segmented way according to the various needs of the members.







## Vivi: Transforming your classroom into a collaborative and interactive space

Vivi is a wireless presentation tool that allows teachers and students to share, display, annotate, capture and record information in real time from any application and computer equipment in a classroom.

#### Туре

Classroom management tool.

#### **Competitive advantage**

A solution that transforms classrooms into an interactive and collaborative learning spaces to increase student engagement and productivity.

#### **Stage of development**

Vivi is an Australian Edtech founded in 2016. The start-up currently has 25 employees. In January 2020, the company closed a funding round bringing the total raised to AUD 6 million. The funding will help accelerate Vivi's expansion into the US market in view to replicate the success and growth achieved in the Australian market.

#### Number of users

Vivi claims to have thousands of users around the world, but does not transparently disclose their numbers. Colleges and universities seem to be the company's main customers, such as the University of Bath and the University of Adelaide.

#### **Price**

No information on this subject could be found. Vivi simply mentions in this respect that its price offer is based on an annual subscription that includes hardware, software as well as technical support and product development.

#### How does it work?

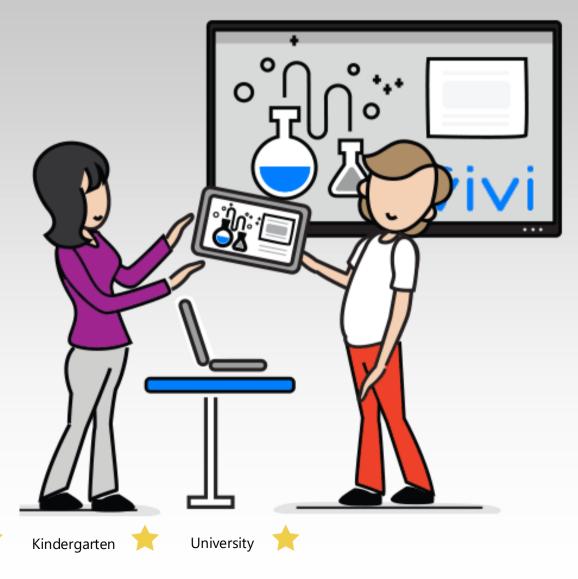
The Vivi solution is based on three devices. The Vivi box which, once installed, allows a screen to be integrated into the system. The Vivi application is the control centre of the system and allows the desired content to be managed and displayed. The application is freely available to students and teachers on the App Store and Google Play Store. Finally, Vivi Central is the system administration platform for managing the solution's features, settings, users and guests. Statistics and data on usage, performance and student engagement are available in this interface.



## Vivi: Transforming your classroom into a collaborative and interactive space

#### **Advantages**

- Solution compatible with any computer equipment (smartphone, computer, tablet...) and operating system (Windows, iOS, Mac OS...).
- Wireless equipment allowing teachers to move freely in the • classroom and to move among students.
- Teachers are able to control and display content on all the students' ٠ devices.
- Classroom management is facilitated as students can project their • work onto the large screen and receive feedback from the class and the teacher easily.
- Screenshots are possible from within the solution and can be • annotated, saved and shared.
- Guests can connect to the system with a simple URL link. •
- A statistical and analytical module allows teachers to monitor the ٠ level of student's participation and engagement in lessons.
- Emergency messages can be sent from teachers or schools to all • devices connected to the Vivi system.





Secondary school 🏻 🌟







## Vivi: Transforming your classroom into a collaborative and interactive space

Vivi and its wireless presentation system transforms classrooms into an interactive and collaborative learning spaces and offers many benefits to teachers and schools, including:

- A significant time saving at the start of the course. Many minutes are traditionally lost in setting up the computer system to project the teachers' lessons, not to mention the incidents and technical problems that can occur during class. Using Vivi allows teachers to avoid wasting time in launching their lessons, especially as the latency period required to set up the computer equipment is often used by students to squeeze out extra minutes of leisure time. It will be easier for schools and teachers to meet and deal with the traditionally busy school curriculum. This will avoid the need for additional sessions and class time to cover the curriculum.
- Using Vivi technology allows teachers to implement a more participatory pedagogy by involving students who will be able to project their work on the big screen in the classroom. Students will be able to receive feedback and comments from their peers as well as from the teacher instantly.
- In addition, by using the Vivi system, teachers will be able to turn an undesired item smartphones that can distract – into a pedagogical asset. Rather than banning mobile phones from the classroom, teachers can encourage students to use them to participate in lessons and answer questions.

However, the solution has several disadvantages:

- As with any digital solution, a major effort by teachers to restructure their lessons will be necessary to make the most of the solution's features and potential. A traditional course cannot be directly transposed digitally and will have to be restructured between theoretical explanations and practical work and their collaborative dimension.
- The school's functioning will have an impact on the budget allocated to acquire the solution. Each screen on which the teacher's content is projected requires a Vivi Box (excluding mobile phones, tablets and laptops which can be connected via the application). In the case of a school where each teachers has their own classroom and their own screen, the acquisition of a Vivi Box will be necessary, which can very quickly increase the cost.
- The digital divide issue must also be taken into account. Not all students are equal regarding the computer equipment and the master of computer skills. Teachers and schools will have to pay particular attention to ensuring that each student has an adequate computer device and that they can use it correctly if they do not wish to impose an inequality in the acquisition of knowledge and skills.









## Squirrel AI: Artificial intelligence for school support

Squirrel AI is an adaptive learning platform that uses artificial intelligence and advanced algorithms to provide students with a personalised learning plan and one-to-one tutoring with human guidance as needed for academic support.

#### Туре

A tool to support the acquisition of knowledge.

#### **Competitive advantage**

To provide appropriate learning and tutoring for each student.

#### Stage of development

Squirrel AI was founded in 2014 in Shanghai, China. The company has raised over USD 180 million in funding since its inception and has achieved unicorn status i.e. a valuation exceeding USD 1 billion. Although the solution is currently used in an extracurricular and tutoring logic, discussions between Squirrel AI and several schools in China are currently taking place to make its system the main teaching method.

#### Number of users

Squirrel AI Learning has opened more than 1,700 schools and has 3,000 teachers in more than 200 cities across more than 20 provinces and regions in China. More than 1 million students benefit from the solution, the equivalent of the New York public school system.

#### Price

No relevant information could be found on this subject.



#### How does it work?

With the help of engineers and artificial intelligence, topics, subjects and curricula are broken down into multiple knowledge points. For example, the secondary school mathematics curriculum is divided into several thousand knowledge points (+10,000), including rational numbers, the properties of an equilateral triangle and the Pythagorean theorem. The aim is to diagnose a student's lack of understanding as accurately as possible. By comparison, a traditional textbook might divide the same subject into 3,000 points. Once knowledge points have been defined, they are combined with lessons, video lectures, revision sheets, concrete examples, questionnaires and personalised tests.



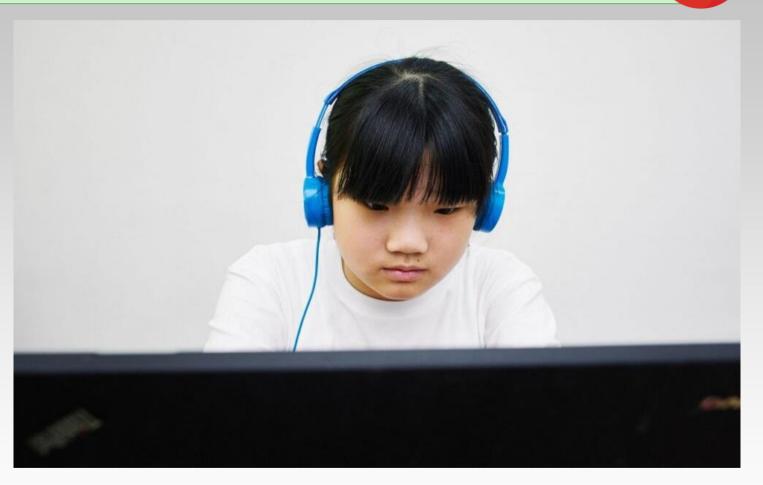




## **Squirrel AI: Artificial intelligence for school support**

#### **Advantages**

- Students are offered an adapted and effective learning path according to the current state of their knowledge, strengths, weaknesses, abilities, learning pace and even personality.
- Learning paths are updated in real time as students study.
- The company claims learning gains of 7-9% over human teaching using traditional teaching methods.
- The cost of the solution, while unknown, is much less expensive than using private tutoring or tutors, according to the company.
- Multiple subjects are available such as mathematics, Chinese, English, physics and chemistry.
- Human teachers are not excluded, however, and are used to supplement the shortcomings and problems that artificial intelligence is not able to solve.



#### **Suitable for**

Kindergarten







University





## **Squirrel AI: Artificial intelligence for school support**

Squirrel AI, by offering a learning path tailored to each student, has many advantages that schools and teachers could capitalise on:

- Schools could offer Squirrel AI as a tutoring tool to students. There is an inequality in the acquisition of knowledge and skills among students. They cannot benefit from individualised tutoring outside the traditional school system. Offering this solution to all students could raise the general level of class. It would also drastically reduce this inequality and allow schools to enhance their reputation by communicating their actions in favour of equal learning.
- Teachers could also use this tool to check the knowledge and skills of their students on key topics and subjects, allowing them to revisit points in the curriculum that have been poorly or insufficiently covered. The solution's micro-cutting of school curriculum makes it possible to precisely target notions that have not been acquired and to optimise the time devoted to revising or re-learning.

However, the solution has certain disadvantages:

- Education experts agree that this type of solution offers learning that is tailored to students but not personalised. The solution does not offer any space for example to the students' desire to learn. The solution has been designed to promote the acquisition of a particular diploma and its use of results in a standardisation of education leading to the same diplomas and training paths. One of the teachers and school's roles, although not a guidance counsellor, is to guide their students in the themes, disciplines, subjects or interests they wish to explore in their higher education or professional lives.
- **Moreover, student do not "learn to learn".** By using the solution, they are simply following instructions from the platform. They do not reflect on their strengths and weaknesses in learning modalities and the ways in which they learn best. This may leave them somewhat helpless for further higher education or in a professional context. However, this ability to reflect on one's learning is also difficult to acquire in traditional education.
- By the founder's own admission, the artificial intelligence's regulation is paramount as it can get out of control and teach inadequate and irrelevant knowledge to students that a human teacher would not. Squirrel AI is primarily intended to be a support for teachers to impart knowledge and skills while personalising learning.





## Eneza: Learning and reviewing with low-tech

Eneza is a learning platform offering learning and revision materials to primary and secondary school students via SMS and the web.

#### Туре

A tool to support the acquisition of knowledge.

#### **Competitive advantage**

The solution does not require a smartphone or an internet connection to use. A mobile phone and a connection to the telephone network is sufficient.

#### **Price**

The solution is available to learners for 3 Kenyan shillings per day (USD 0.03). During April and September 2020, the platform was available free of charge to enable students to continue learning despite the closure of schools.

#### Number of users

The platform claims more than 10.2 million users since its creation. Since April 2020 and the closure of schools as a result of the Covid-19 pandemic, the number of students on the platform has increased fourfold from 500,000 to 2.2 million.

#### Stage of development

Eneza Education was founded in 2011 and the platform was launched in 2013 in Kenya and expanded to Ghana in 2017, lvory Coast in 2018 and Rwanda in 2021. The company's goal is to support 50 million learners across the whole of Africa, especially Central Africa. Since the beginning of the pandemic, the company has hired 22 additional teachers, bringing the total number of employees to over 50.

#### Link https://enezaeducation.com/



#### How does it work?

Once registered on the platform, students choose a topic to study. Questions are sent to them by SMS, in the form of a quiz at the end of which they can see their results and work on another topic, after suggestions from the teaching staff. If a student does not perform satisfactorily on the test, Eneza Education sends short lessons on the subject for the student to fill in the gaps. In addition, stuents can use the "Ask a Teacher" service, which allows questions to be sent by SMS to a group of teachers who respond in less than five minutes on average.

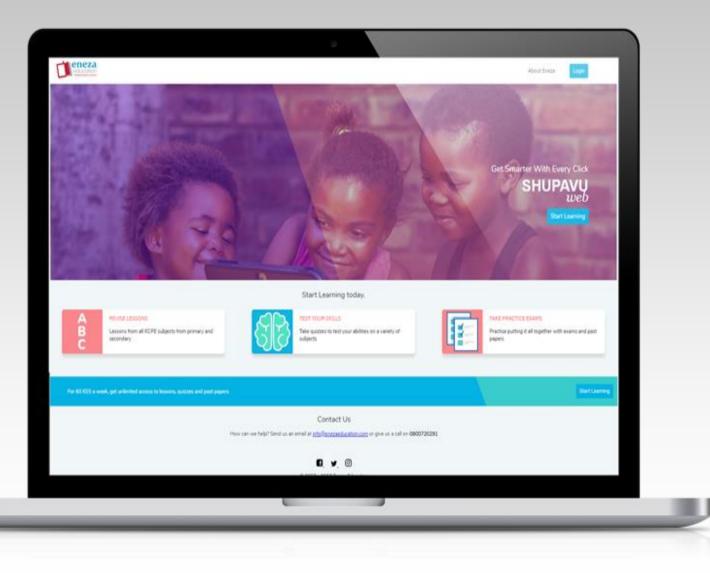
## Eneza: Learning and reviewing with low-tech

#### **Advantages**

ACCEUI

- Students can access learning and revision materials from a mobile phone and a telephone network connection. A smartphone or an internet connection is not required.
- The curriculum is broken down into a series of short lessons to make it easier for students to absorb the knowledge.
- Quizzes and feedback are sent to students to ensure that they have acquired the right knowledge and concepts.
- Students can ask questions to teachers who respond very quickly. More than 6 million questions have been asked since the launch of Ask a Teacher.
- Students' academic performance increases by 23% after 9 months on the platform according to the solution's designers.

\*\*\*\*



eneza education

#### Suitable for:

Primary school



20 GENEVA INTELLIGENC STRATEGIC INFORMATIO



## Eneza: Learning and reviewing with low-tech

Eneza Education offers a low-tech solution that is simple, practical and cost-effective to provide students with educational and revision materials to improve academic performance.

The solution has many advantages:

- Eneza Education can be relevant for a school to offer tutoring while reducing the digital divide among its students and therefore inequalities in learning. The solution does not require the acquisition of particularly expensive computer and technological equipment such as smartphones. A simple phone connected to the telephone network is enough to receive lessons by SMS.
- For a school, offering a service similar to "Ask and Teacher" could be particularly beneficial as it would allow, for example, to accompany students in the completion of homework. For many reasons, students are not equal in the amount of support they get from their family circle. The school institution could partly remedy this by offering this service and by encouraging the commitment and motivation of its students in their learning.
- Using an alternative solution to virtual classrooms, particularly used by teachers and schools during the Covid-19 pandemic and school closures, would help to "break the rhythm" and counteract "Zoom fatigue". Zoom fatigue is defined as a state of weariness, fatigue and boredom that a student may experience when attending multiple meetings, classes or online events throughout the day. By offering a new way of learning and a new educational experience, students could be re-motivated in their learning and the school could communicate on the subject, which is particularly discussed at the moment.

#### However, the solution has certain limitations:

- Success of this kind of solution mainly depends on the mobile phone penetration of a geographical area as well
  as its mobile connectivity. For example, mobile phone penetration in Kenya is over 90% and connectivity is
  good almost everywhere. Developing the solution in countries with lower mobile phone penetration and
  poorer connectivity would reduce the relevance of such a solution, its implementation and its low-tech
  character.
- Some studies point out that reading a lot of information on a (more or less small) on a mobile device reduces student's attention and engagement and, by extension, their ability to acquire and assimilate new knowledge. The solution is however conceived in a school support logic and not as a main tool for knowledge acquisition.
- The use of SMS, particularly in Europe, is becoming increasingly obsolete, especially among young people, in favour of instant messaging applications such as WhatsApp, Telegram, Signal, Facebook Messenger or Viber. SMS has technical limitations compared to its competitors, especially when it comes to sharing photos and videos in good resolution, and animating conversations with effects, emojis and other content such as voice messages. This new way of communicating could restrict the use of such a solution and therefore its relevance for an institution.













# EVOLUTION OF EDTECH BUSINESS MODELS

Prospective monitoring June 2021 by Geneva Intelligence







Definition of Edtechs



Methodology



Ripen

**Riipen** brings together companies and schools and their students so that they can collaborate on common projects.



**Nanaba** is an application that locks recreational applications on learners' phones. Solving a review quiz unlocks them.



**The Juice** is a digital platform that provides age-appropriate, non-biased and non-partisan news articles through a press review, "the daily juice".



The **Beekee Box** is a portable learning platform designed to transmit and share educational content anywhere and everywhere.



**Vonder** is a gamification platform that converts educational content into short and gamified lessons.





## **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.

DISCOVER MONITORING METHODOLOGY





## **Definition of Prospective Monitoring**



#### **Overview**

Prospective monitoring consists of 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**



In the car on the way to Ploumanac'h in Brittany, Léon recalls with delight the best moments of this school year made special because of the Covid-19 pandemic. His thoughts dwell particularly on the **new technologies introduced by his school this** year to facilitate and improve the learning of students and the transmission of knowledge by the teachers.

One of these technological marvels was suggested by Minerva, his French teacher, who encouraged her class to adopt the **Nanaba** application. This app blocks the recreational applications on Leon's phone, such as Youtube, Facebook and Instagram, which he is so fond of, in order to take a quiz to review the concepts that have been taught in class. If Leon passes the test, the recreational applications are unlocked and he can use them as he pleases. This application has undoubtedly helped Minerva to be more serene by no longer chasing cell phones during her class.

In keeping with her talent for unearthing new technologies, Minerva also implemented the **Vonder** solution in her classroom, which converts educational content into short and gamified lessons. Through various games and quizzes, Leon and his classmates were able to review grammatical and syntactic concepts that had been introduced and explained by Minerva beforehand.

Albus, his English teacher, never one to rest on his laurels, proposed a new medium called **The Daily Juice** in place of the traditional BBC morning newscast and the audio CD in Leon's schoolbook. This press review compiles and rewrites neutral and objective articles every morning, free of any bias or partisanship, for Leon to read. By going through this concentrated information every morning, Leon has been able to develop his critical thinking skills, his general knowledge and has cultivated a passion for reading the press.

On another note, Albus also offered his class the **Riipen** application, which connects companies and schools so that they can collaborate on joint projects. Through this application, companies benefit from Leon's and his classmates' skills, while the latter can expand their professional network, gain work experience, enhance their CVs and improve their chances of entering the world of work when they grow up.

During a class outing to Rochers de Naye in the heights of Montreux, with the aim of discovering the richness and diversity of the Swiss fauna and flora, Leon was particularly impressed by a solution used by Severus, his history teacher. In the middle of nowhere, without an Internet connection, Severus was able to maintain his course normally by sharing documents and educational content on the cell phone of Leon and his classmates, via the **Beekee Box.** 

Lulled by the passing miles of tarmac and the promise of a peaceful vacation, Leon ponders future innovations that will be offered by Albus, Minerva and Severus after the summer break to create new educational experiences and make the school day even more fun and interactive.





**DISCOVER EDTECH TRENDS** 



## Riipen: when the world of work meets the world of education

Riipen is a platform that connects companies and students. Companies share their needs and projects while students publish their expertise. By carrying out a business project, students are able to obtain university credits.

#### Туре

A tool that promotes the acquisition of knowledge and skills.

#### **Competitive advantage**

The solution promotes the employability of students and the attractiveness of the courses offered by an institution.

#### Price

The solution is based on a freemium model. It can be used for free in its basic functionalities while the more advanced ones will require the use of a professional subscription for USD 2'499 per year and more depending on the needs.

#### Number of users

The start-up claims more than 10'000 organizations and companies registered on the platform as well as more than 320 schools representing 72'000 students.

#### Stage of development

Riipen was founded in 2014 in Vancouver, Canada. Between 2017 and 2019, the company raised USD 5.8 million to ensure its development in the United States. The company, now well established in North America, is looking to expand internationally. Riipen employs more than 100 people.

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Ripen

#### How does it work?

Universities or professors publish on Riipen the "programs" that students follow. The educational institutions are thus put in touch with companies that have themselves shared projects they would like to see carried out by students. If the projects proposed by the company correspond with the university's program, the latter selects the students to launch the project. Schools, companies and students are thus able to collaborate, talk and receive feedback directly from the platform.

#### Link https://fr.riipen.com/





## Ripen

Riipen: when the world of work meets the world of education

#### **Advantages**

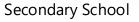
- Very fast and intuitive design of projects on the platform for companies and programs for educational institutions.
- Numerous project management and communication applications integrated into the platform (video conferencing, file sharing, calendar, reminders, notifications, etc.)
- Feedback and evaluation of students regarding the project possible within the platform.
- Integration of the solution with the school's learning management system.
- Possibility for schools to invite the member companies of their network to join the platform for free to post projects.
- Possibility for students, universities and companies to respectively develop their professional network, attractiveness of their training and employer brand.

#### Suitable for:

Kindergarten

Primary School

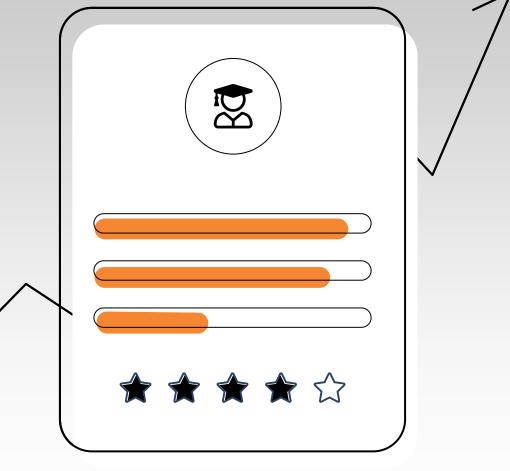














## Riipen: when the world of work meets the world of education

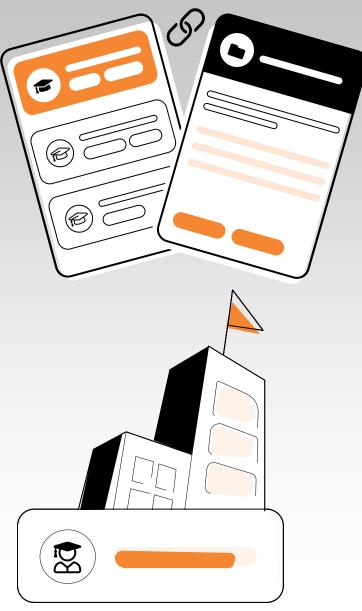
Riipen is a digital platform that connects companies, educational institutions and their students so that they can work together on various projects.

The use of Riipen can enhance the attractiveness and credibility of the training provided by the educational institution for three reasons:

- Better employability of students upon graduation, with a stronger CV, a more developed professional network, and skills and knowledge relevant to the job market, can enhance the reputation of a program and, by extension, the credibility of its degree.
- The attractiveness of a training program can be reinforced by offering this service to students. In a very competitive market, schools that are concerned about the employability of their students will be more attractive to students who are particularly attentive to their future insertion in the job market.
- Thanks to Riipeen and the students, the schools are able to transform the companies that collaborated on the projects into true ambassadors of the institution, thus **consolidating the reputation of the school.**

However, the solution has several limitations:

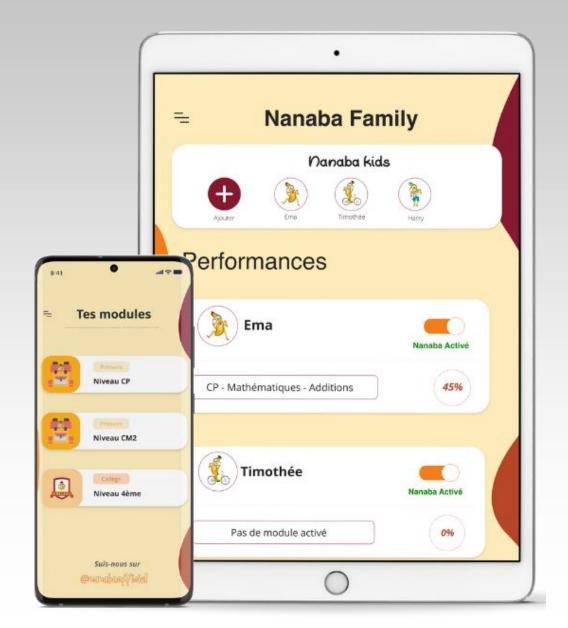
- The use of this solution by educational institutions can lead to a more precarious labor market, especially for young graduates. Companies may be more inclined to "use" the skills of students offered free of charge via Ripeen than to employ young graduates. The use of many interns by companies, without offering firm job offers, is often decried. Taking over a solution that promotes this practice and trend thus presents a reputational risk for the school.
- Not all subjects and programs offered by an educational institution are equal in terms of their attractiveness to companies. The educational institution will have to be able to propose alternative projects for courses or programs that do not appeal to companies in order to avoid creating inequality between its various courses. Bilateral partnerships with companies, public administrations, without the intermediation of the platform, should not be neglected.
- Traditionally, higher education institutions have an internal careers and employment department or alumni network whose tasks include identifying job and internship opportunities. The use of Riipen could lead to duplication and organizational tensions. A potential solution to this problem would be to entrust the Careers and Employment Department with the search for job and internship offers for graduates and Riipeen with the search for offers for students still in school.



Ripen

8 GENEVA INTELLIGEN STRATEGIC INFORMAT





Nanaba is an application that once installed on the learners' cell phone will lock recreational applications such as Youtube, TikTok, video games or Instragram. Solving a review quiz will unlock the lock on other applications.

#### Туре

Tool for knowledge acquisition.

#### **Competitive advantage**

Transform the cell phone into a pedagogical ally by facilitating revision.

#### Price

The application is available for CHF 11 per year for primary school students and CHF 21 for secondary school students. A family offer, for up to four accounts, is available for CHF 31 per year.

#### Number of users

No relevant information could be identified in this regard.

#### **Stage of development**

Launched in France in June 2021, the start-up aims to rapidly expand internationally, particularly in the United States in the third quarter of 2021 and in China in 2022. The company expects to recruit more than 40 employees by the end of 2021 in order to develop a second version of the application for adults and foreign language learning.

Link https://www.nanaba-shop.fr/



## Nanaba: transforming the cell phone into an educational tool

#### **Advantages**

- The app encourages students to study in order to benefit from the recreational apps.
- Quizzes are available for the subjects ٠ French, English, math and general knowledge.
- More than 8,000 questions were • written by national education teachers.
- The review modules are designed for ٠ primary and secondary education.
- The application is equipped with an ٠ artificial intelligence module that will adapt to the child's level. If the answers are incorrect and the level of the questions too high, Nanaba adjusts by offering alternative questions.
- Students have access to quiz corrections to help them acquire knowledge
- Parents or the school have access to the children's test results, allowing them to follow the progress done.



#### Suitable for:

Kindergarten

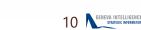
Secondary School



Primary School



Universisty





## Nanaba: transforming the cell phone into an educational tool

Nanaba is an app that locks recreational apps on a student's cell phone/tablet until the student solves a review quiz.

This solution has certain advantages for a school:

- This solution allows schools to deal in an innovative and educational way with key distractions, namely the use of cell phones in class. Instead of a repressive policy aiming at banning cell phones during class, the school and teachers can use this tool and students' cell phones to encourage them to revise.
- Similarly, Nanaba can be a way to offer a new educational experience for students' revision. Traditionally repetitive and uninviting, revision can take on a new appeal if there is a reward in the form of recreational applications and social networking.
- In addition, this application can partially counteract the inequality in knowledge acquisition. Not all students receive equal support from their parents or family units. Offering Nanaba to students by encouraging them to review by themselves can partially counteract this problem.

However, the solution has several disadvantages:

- The major disadvantage of the solution lies in its main advantage, namely the unlocking of
  recreational applications on the phone following a revision period. This feature establishes a "right
  to reward" following an effort or a revision period which caN reduce the students' "taste for
  learning" and be counterproductive on a pedagogical level for the school.
- Nanaba's intrusion into the students' daily lives by blocking the phone's recreational applications is obvious. The implementation of this solution will require at least an agreement from the parents and their involvement in the pedagogical process.
- The digital divide should not be ignored by the school. Not all students have a cell phone or the same computer skills. When using this solution, the school must be able to ensure that all students can benefit from the solution under the same conditions, otherwise an inequality of knowledge acquisition would be created among them and would counterbalance the benefits brought by Nanaba in reducing inequalities related to tutoring.







## The Juice: Developing learners' critical thinking skills

The Juice is a digital platform that provides age-appropriate, non-biased and non-partisan news articles, as well as additional educational content such as vocabulary words and short instructional videos through a press review, "the daily juice".

#### Туре

Tool to assist in the acquisition of knowledge and skills.

#### **Competitive advantage**

Develop a critical mind, a general culture as well as a taste for current events and reading the press.

#### **Stage of development**

The company was founded in 2019 in Miami, USA. The Juice is the sister company of New and News that also offers nonbiased articles for adults. Since its inception, nearly 30 employees have been hired.

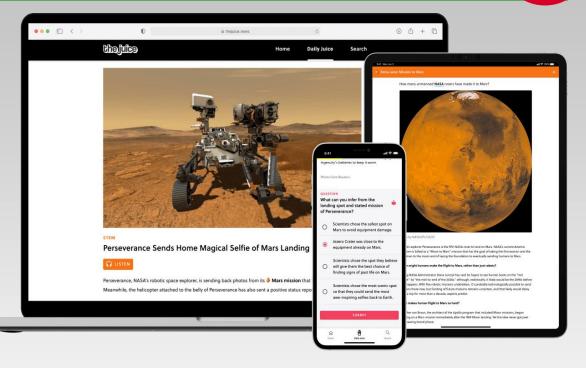
#### Number of users

The company claims to send its press review to nearly 30,000 students every day.

#### **Price**

In order to get the press review every morning, you need to subscribe for USD 7 per month per user. The annual subscription is fixed at USD 60.

Link https://thejuicelearning.com/



#### How does it work?

The Daily juice is written every night by the Juice team. Each publication contains:

- 4 educational news articles between 200 and 300 words
- 1-3 educational news supplements that go deeper into the analysis (between 600 and 800 words)
- An infographic that helps improve digital reading
- A "Bright Side story" about an inspiring story
- A video that teaches a concept in science and technology
- 6 quiz questions on the publication of the day
- A dozen interactive vocabulary words

## The Juice: Developing learners' critical thinking skills

#### **Advantages**

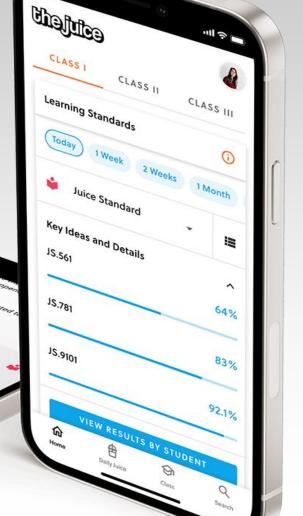
- News written by The Juice is limited to 200 • words and is free of partisan posturing and bias.
- The press review is available every day from ٠ Monday to Friday.
- The articles are written at four levels for student comprehension and reading.
- A guiz is available in the press review to check ٠ the students' understanding of the press review.
- The press review is accessible from the digital • platform on the Internet, on any electronic device with the application and via newsletter.
- Teachers can customize the press review by ٠ adding their own content.
- Through a statistical module, teachers are able • to track which students have opened and read the press review as well as their answers to the quiz.

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#### Suitable for:

**Primary School** 

Secondary School 🌟 🌟



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# **Jhajulea**

## The Juice: Developing learners' critical thinking skills

The Juice is a news review produced by teachers and educators to provide students with unbiased, partisan news in multiple levels of understanding and reading.

The solution has significant advantages for a school:

- The Juice helps to develop critical thinking skills, general knowledge, and an interest in current events among learners. Using The Juice allows the teacher to save a considerable amount of time in creating a press review. Even more so if he has to purge the partisan dimensions from it.
- Proposed in English, the use of The Juice would be particularly relevant in English classes. It would allow students to **develop their vocabulary while reinforcing their knowledge** of the Anglo-Saxon world. By offering this service, a school would be able to offer a new educational experience to its students, an innovative alternative to the BBC newsletters and audio CDs of traditional textbooks.
- Not all parents educate and accustom their children to reading the press in the same way. By making this service available to students, the educational institution will be able to partially compensate for this inequality and encourage the development of a critical mind.

However, the solution has some disadvantages:

- Although the intention of offering non-biased and non-partisan articles is attractive, offering neutral articles remains difficult except for purely factual articles devoid of any analysis. However, the selection of one piece of information over another is already an analysis in itself. Moreover, the press review is essentially based on American media and world views.
- Paradoxically, by wanting to develop students' critical thinking skills by removing the
  partisan aspects of an article, The Juice could be counterproductive. The solution does
  the work that a learner should do in identifying and questioning the treatment of a
  news story. Ideally it would be up to the student to identify the postures and partisan
  references to develop their critical thinking. In this regard, The Juice could introduce a
  partisan article in its press review so that the student can engage in this exercise. The
  teacher can also add by themselves unprocessed articles to confront their students on this
  issue.



Perseverance Sends Home Magical Selfie of Mars Landing

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Home

STEM

Perseverance, NASA's robotic space explorer, is sending back photos from its **Ars mission** that have amazed scientists. Meanwhile, the helicopter attached to the belly of Perseverance has also sent a positive status report.

The rover touched down softly on a surface of sand dunes, steep cliffs, boulders, and small craters to **probe** Jezero Crater, the site of a 28-mile lake and a river bed that existed 3.9 billion years ago. There, the rover will search among rocks and dirt that may have settled at the lake's bottom for fossilized evidence of past **microbial** life.

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Daily Juice

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Search



BEEKEE

## Beekee: Learn and transmit anywhere

The Beekee Box is a portable learning platform designed to transmit and share educational content that works anywhere and does not require Internet access.

#### Туре

A tool to support the acquisition of knowledge.

#### **Competitive advantage**

The solution does not require an Internet connection or power supply to operate, making it possible to teach and share content with learners anywhere.

#### Price

No information on the commercial price of the Beekee Box is available. However, its founders claim that its manufacturing cost is around CHF 150 and requires about ten hours.

#### Number of users

No information could be identified on this subject. Designed for humanitarian trainers in the field, the Beekee Box is used by Médecins sans Frontières and Inzone, a humanitarian education program of the University of Geneva.

#### **Stage of development**

Beekee was founded by two researchers in educational technology at the University of Geneva. The researchers obtained funding from the Swiss National Science Foundation and Innosuisse in 2022 to transform their scientific results into a commercial application. This funding takes the form of a grant of CHF 130'000 which will cover the salary of the project leader, Vincent Widmer, for one year and the purchase of equipment.



#### How does it work?

The teacher drops the educational material on the Beekee Box with his computer and then takes it to the field. Once on site, he just has to turn it on and in less than a minute, he will create a local wireless network to which learners can connect using their own devices to collaborate in real time, share and retrieve documents or even follow complete training courses.



# Beekee: Learn and transmit anywhere

### **Advantages**

- Beekee The Box is easily transportable (12 cm high and 8 cm wide for a weight of 250 grams).
- High storage capacity up to 256 GB.
- Autonomy of 1.5 hours without ٠ battery and up to 10 hours with external battery rechargeable with solar energy.
- No dependence on availability of a • power supply or Internet connection.
- solution works with any The computer, cell phone or digital tablet.
- 25 users can connect simultaneously ٠ to the Beekee Box.
- The data exchanged on Beekee Box • are secure and physically stored on the box.
- The Beekee Box works on open • source model. Possibility to build it by yourself.



BEEKEE

### Suitable for:

Kindergarten





Secondary School 🚽 🛨 🛨







## Beekee: Learn and transmit anywhere

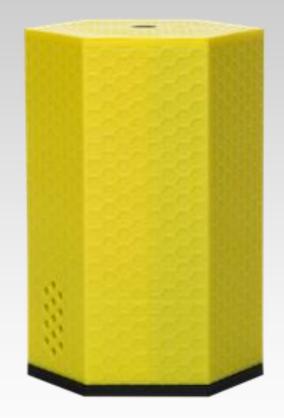
The Beekee Box is a device generating a wireless network to transmit educational content to learners without using the power grid and an Internet connection.

The solution has many advantages:

- Schools could take advantage of the Beekee Box to offer their students new educational experiences by teaching in unusual places such as in the countryside, in museums or in any place without an Internet connection and of educational interest.
- This could facilitate school trips. For example, the educational institution would be able to provide education under the same conditions in the classroom in the morning while allowing extracurricular activities in the afternoon.
- This solution is very interesting to develop in the context of the international Geneva since many international organizations are present there and may need to use the Beekee Box. Operating in open source, a joint charity project between a school that would build the Beekee Box with its students and an international institution that would bring this technology on the field would enhance the reputation of the school as being innovative, social and open to the world.

However, the solution has certain limitations:

- The "right to disconnect" in a school setting would not be promoted through this technology. Learners are
  already frequently exposed to digital devices in classroom and home settings. This issue is becoming more
  and more important in society, the workplace and the educational world and could represent a reputational
  risk for the institution.
- Although the solution seems accessible in terms of price for industrialized countries, acquiring a Beekee Box will represent a certain budget for the least developed countries. The possibility to build the solution, thanks to an open source operation, potentially reduces this problem. However, advanced electronic equipment is required for its development, such as 3D printers.
- The solution has the merit of being able to be used in places where the Internet connection is missing or incomplete and where power cuts occur frequently. However, the Beekee Box is aimed at students or teachers with a smartphone, computer or digital tablet to power the box or connect to the system. Thus, the solution reduces the problem of the digital divide without fully addressing it.



BEEKEE

# ACCEUIL PRECEDENT SUIVANT

# Vonder: Learning while having fun

Vonder is a gamification platform that converts educational content into short and gamified lessons.

### Туре

Knowledge acquisition tool.

### **Competitive advantage**

Promote student learning through gamification and microlearning.

### Stage of development

Vonder was founded in 2018 and claims to be profitable since its first year of operation. While the startup has shown strong growth since its inception, the startup had a 2020 goal of increasing its user base and employees by 3x.

### Number of users

Vonder claims more than 55'000 users of its platform.

### Price

No information could be found on this subject.

### How does it work?

Vonder offers three games to make educational content fun. The "Flash" module allows teachers to create questions and answers for students. "Jump" offers three lives to the learner who must answer within a given time and go as far as possible in the quiz and "Quest" is similar to an adventure and an educational quest. The teacher only has to insert his pedagogical content in the different games via the knowledge management tool offered by the platform.

Challenge 1 Started Score The Secret 150 200 Completed Average Chapter Code of Conduct 150 Score Difficulty : Easy 150 Completed **Questions** 25 Average Rate 25 Scores Score Rate 75% 33% Learning Objectives Assessment Outcome 1. Select what is or what is not the Employee is able to identify what company confidential information. information can or cannot be 2. Choose the best behavior to protect disclosed. the company confidential information. Demographics Scores No. of Marketing Users 510 Users Retails 204 Users HR 189 Users 12 16 24 28 Scores

<sup>v</sup>onde<sup>v</sup>



# Vonder: Learning while having fun

### **Advantages**

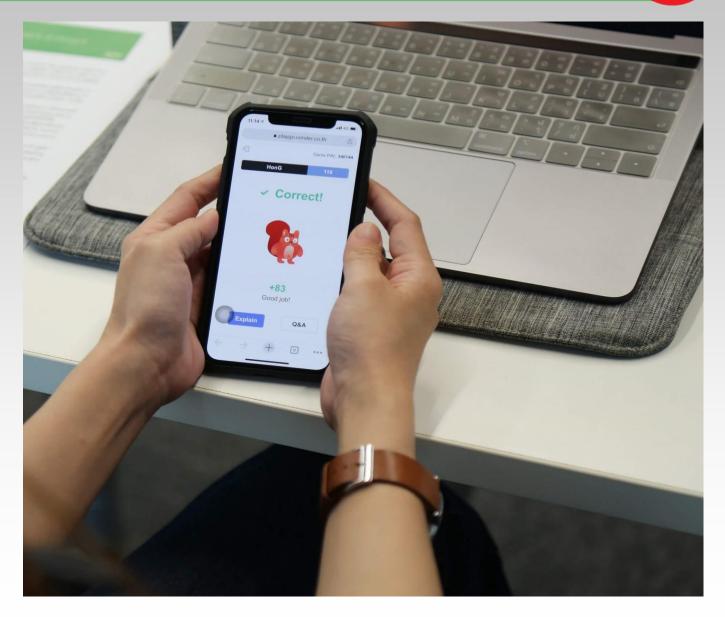
- The platform makes teaching fun by offering courses through games and quizzes.
- Vonder does not require any computer coding skills. The solution is very intuitive and easy to use, allowing teachers to insert their educational content into Vonder games very quickly.
- The solution provides schools with a statistical and analytical module to track students' progress and all their learning interactions.
- A reward and ranking system is built into the games and keeps students highly engaged in their learning.
- Vonder also offers support for creating educational content if requested by the school.
- Vonder can be used for extracurricular activities offered by the school. A "company " version of Vonder is available.

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### Suitable for:

Secondary School  $\star$ 

Primary School



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# Vonder: Learning while having fun

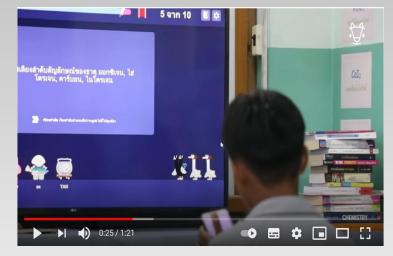
Vonder is a platform allowing teachers to integrate their educational content into games.

The solution has significant advantages:

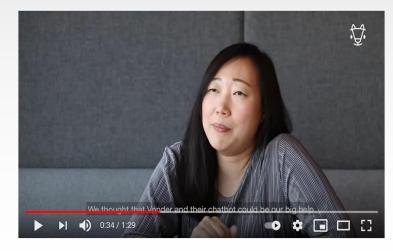
- By converting the educational content into short, gamified lessons, the school strengthens the means it offers to **fight against the dropout of its learners**. The fun aspect of the lessons reinforces the students' motivation and engagement in their learning. Vonder can also be offered to students as a means of revision to reduce the inequality of learners in the acquisition of knowledge as seen with Nanaba.
- Vonder can be used to evaluate students' work and learning in an alternative way. Instead of traditional grades, the educational institution can use this technology to grade students through the various games and rewards. This helps to reduce the stigma of grades and the anxiety that learners may feel about traditional assessments.
- The school can also take advantage of the Vonder solution to **consolidate the technological means to improve the management of "school life**". The "enterprise" version of Vonder offers a chatbot that allows users to access relevant information very quickly, particularly on an Internet or Intranet site. The solution could be used by a school to guide students or their parents in the search for administrative documents related to school life (transcript, online correspondence book, internship agreement ...).

However, the solution has several disadvantages:

- **The collaborative aspect is absent in Vonder**. Although students can exchange orally with each other before answering the questions proposed by the teacher via the games, no collaborative functionality within the platform is proposed. The presence of collaborative features (shared rewards, peer review...) would have strengthened the appeal of Vonder.
- **Gamification poses a reputational risk to the school**. For some parents, games are not synonymous with seriousness. The school will therefore have to communicate on the pedagogical benefits of this solution to the parents and if possible involve them to guarantee the use of Vonder.
- As with any gamification solution, complex concepts and parts of the curriculum cannot be conveyed solely by Vonder. It is therefore important to design the solution as an additional tool for teachers and schools to keep students engaged and motivated.



vonde













# EVOLUTION OF EDTECH BUSINESS MODELS

Prospective Monitoring September 2021 by Geneva Intelligence



# Summary of the September 2021 Edition



Definition of Edtechs



Methodology





**EvidenceB** is a tool that adapts the learning experience to the user's learning methods through the use of algorithms.



**Foondamate** is a tool for obtaining learning resources (Wikipedia articles, course materials, word definitions, solving equations, etc.) via the WhatsApp application.

Meg.

**Meg Languages** is a solution for introducing a Chinese and Spanish language learning programme via video conferencing into a classroom.



**Immersive VR Education** is a virtual reality communication platform created by the startup Immersive VR Education. Its aim is to facilitate creation, learning and collaboration in virtual reality.



**Artcentrica** is a platform for viewing artworks from a distance. The added value of this solution is the quality of the image offered.





# **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.

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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.

DISCOVER METHODOLOGY





# **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.

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The below steps were taken to carry out the monitoring and illustrate the results:

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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.
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- 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

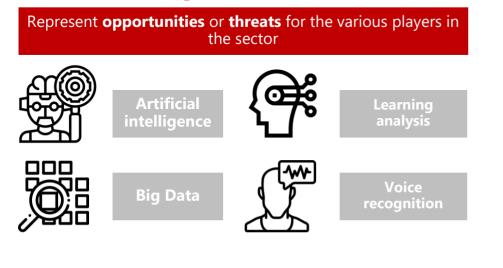




# **Edtech Trends Analysis**



# Main technological trends



# **News highlights**



acquires the company



The terms of the acquisition were not disclosed

Confirms Microsoft's interest in **entering the** education market

The start-up



Raises **EUR205 millions** Valuing the young Austrian company at **EUR1.4 billion** 

It becomes the first **European EdTech unicorn\*.** 



The Australian branch of **PWC** has published an analysis suggesting that education institutions should **collaborate** rather than compete with Edtechs

To **rebound** from COVID, analysts advise institutions to ask themselves **three questions:** 

1. What is our mission and value proposition?

**2.** How does our **mission** determine our **future activities** and our size and shape?

3. How will we develop our key success factors in this new reality?



Preparing an IPO°

To raise between **USD400** and **USD600 million** 

The company could soon be worth **USD21 billion** 



**DISCOVER EDTECH TRENDS ANALYSIS** 

\* Start-up valued at over USD1 billion ° Initial public offering



# ACCEUIL PRECEDENT SUIVANT

# **EvidenceB: AI for learning**

EvidenceB is an Edtech offering adaptive educational tool systems. The technologies proposed by EvidenceB are based on 3 pillars: cognitive science, artificial intelligence and UX interface (global user experience).

### Туре

A tool that promotes learning by adapting the educational experience to the user's learning methods.

### **Competitive advantage**

The solution can offer a differentiating factor by improving the personalisation and playfulness of learning.

### **Prices**

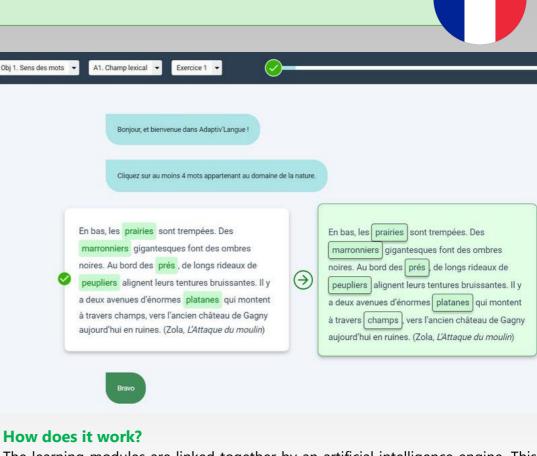
No information on the commercial price of the solution is currently available.

### Number of users

No precise information on this subject could be identified. The company has gained the confidence of the French National Education System, which has purchased five maths modules for the 2.2 million pupils in cycle 2 (primary school) for four years.

### Stage of development

The start-up was created in 2017 in Lille. It now has around 30 employees and its turnover triples every year. EvidenceB raised EUR 2 million in 2019 and is preparing a second round of funding for 2022. It has also entered into a partnership with Pearson, the world's leading publisher of school education, and obtained a contract with the French National Education.



**Evidence**B

The learning modules are linked together by an artificial intelligence engine. This is a personalisation algorithm that identifies not only whether the answer given by the student is right or wrong, but also whether the student has called on help or avoided a question.

Based on such parameters, the solution will form clusters of students with a similar learning profile in order to offer them adapted exercise modules. All the modules begin with a profiling exercise consisting of about fifteen questions relating to the notion that the teacher is trying to convey. It provides the starting point and the algorithm takes over to propose exercises adapted to the student who can then work independently.

# **EvidenceB: AI for learning**

### **Advantages**

- Adaptability and customisation of learning by taking into account the needs and working methods of learners.
- Development team composed of experts in engineering and data analysis.
- Using knowledge from cognitive science to offer learning methods that maintain the attention and curiosity of learners. The platform offers exercises in the form of videos, chat-bots or games.
- Provision of a dashboard for monitoring student learning that can be used as a decision support tool for teachers.
- Closely followed and supported by the French Ministry of Education, Sport and Youth, which is investing heavily in this young company.
- Working with major textbook publishers to develop their courses programmes.

### Suitable for:







**EvidenceB** 

# **EvidenceB: AI for learning**

EvidenceB is a solution that allows educational institutions to optimise the learning experience of their students by providing them with personalised exercises and learning materials.

There are three reasons why the use of EvidenceB can enhance the attractiveness and effectiveness of the training and teaching provided by the educational institution:

- The use of cognitive science methods, artificial intelligence and UX optimization techniques can offer real added value to the quality of learning. These have a great impact on the personalisation of the learning path. In addition, they support and complement the work of the teacher.
- The company has decided to diversify its learning methods by offering **playful exercises** (videos, chat bot, games, etc.) based on the expertise of cognitive scientists to **activate** and **maintain** the **curiosity of students** and serve the educational purpose.
- The solution offers teachers a **monitoring tool** that allows them **to follow the progress and challenges** of each student. Teachers will be able to **intervene and offer support** to students in the subjects/modules where they need it. This can represent a significant efficiency gain for teachers.

However, the solution has several limitations:

- The use of databases and algorithms does have its limitations. Indeed, the quality of the decisions taken with the help of data analysis depends primarily on the **quality of the data**. This data is collected during the first so-called "parameterisation" exercises and could be **distorted in several ways**.
- The algorithm decides on the parameters of the exercises on the basis of a profiling exercise proposed in the introduction to each module. Taking into account the variation in **behaviour, needs and desires of individuals,** linked to mood, motivation level, energy level, etc., would then be an element that **would improve the quality of the solution** and the pedagogical adaptation.



**EvidenceB** 



### FOONDAMATE

### FoondaMate: Receiving learning materials on WhatsApp



FoondaMate is a chatbot-like tool to obtain learning resources through the WhatsApp application. The platform includes Wikipedia articles, word definitions, course materials and solutions to mathematical equations.

### Туре

Tool to facilitate access to educational resources

### **Competitive advantage**

To provide students without access to a high-speed internet network with the possibility to obtain their educational resources.

### Price

Free of charge

### Number of users

More than 140,000 users have already used the solution.

### Stage of development

FoondaMate was launched in August 2020 in South Africa. The idea for its creation came from the realisation that a large proportion of South African students had no access to education due to schools being closed during the pandemic. The tool is regularly updated/improved.

### How does it work?

The learner connects to the application (a WhatsApp conversation) Foondamate through the company's website or by sending "Hello" to +2760 070 3213 on WhatsApp. The learner can then ask various questions or queries to the chatbot, which will very quickly provide an answer, a Wikipedia article or a document to be downloaded to his or her smartphone.

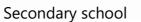
Link https://foondamate.com/

### FOONDAMATE

## FoondaMate: Receiving learning materials on WhatsApp

### **Advantages**

- Allows students to access educational resources The internet via chat EcondaMate **Define Momentum** Define momentum Noun The product of a body's mass and its velocity Noun An impelling force or strength Search gravitational force fetches results from Wordnet Dictionary Newton's law of universal gravitation is usually stated as that every particle attracts every other particle in the universe with a force fetches results that is directly proportional to the from Wikipedia product of their masses and inversely proportional to the square resources from local of the distance between their centers. The publication of the government archives theory has become known as the "first great unification", as it marked the unification of the previously Search described phenomena of gravity on **Download Physical** Download physics question gravitational force 00 papers Sciences Paper 1 June 2018 Suitable for : Primary school
- with little or no mobile data and without the need for a computer.
- Easy to use and linked to the popular WhatsApp • messaging application, which is often preinstalled in phones and for which mobile internet providers offer deals allowing use without mobile data charges.
- Already available in more than 10 languages, • willing to develop internationaly and add more languages in the near future (including Hindi, Portuguese and Spanish)
- Encourages and teaches students to seek information voluntarily and independently.
- Possibility of setting assignments and deadlines for teachers.
- Answers and documentation are provided very ٠ quickly.



Kindergarten











### FOONDAMATE

### FoondaMate: Receiving learning materials on WhatsApp

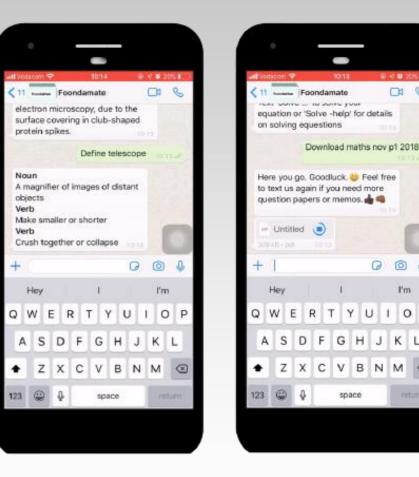
FoondaMate is a tool for obtaining learning resources through the WhatsApp application.

This application has certain advantages for a school:

- FoondaMate helps reduce inequalities between students by offering a solution to those with limited access to computers or a wifi connection.
- The solution is free and easy to use. It can become an alternative • to an intranet for institutions that do not already have such a system and thus represent financial savings.
- The solution allows teachers to transmit **deadlines and assignments** • quickly and easily via the WhatsApp application, which can be an organisational and pedagogical advantage.

However, this tool can be improved in several aspects :

- Answers to guestions asked by the learner are delivered in the form of a WhatsApp message by a chatbot. As these messages are not always easily formatted, ease of reading and therefore learning can be impacted.
- The almost systematic use of the Wikipedia website limits the • reliability and diversity of sources used to answer users' queries.
- The application may not be very useful in geographical areas where • the internet connection is generally available and unlimited. The same applies to areas where internet service providers do not offer the data used by Whatsapp.
- May **increase inequalities**; if the solution is used systematically by a • teacher, students without a smartphone may be penalised.



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# ACCEUIL PRECEDENT SUIVANT

## Meg Languages: Remotely learn mandarin and spanish

Meg Languages is a solution for introducing a Chinese and Spanish language learning programme via video conferencing into a classroom. Students are connected to a team of teachers based in China who conduct live interactive lessons.

### Туре

Service for learning a foreign language (currently Mandarin and Spanish) via video-conferencing.

### **Competitive advantage**

Provides Mandarin lessons without investing in the recruitment of a person with this skill

### **Stage of development**

The company was founded in 2012 under the name "My Chinese Tutor" in Beijing by two American expats. Meg now teaches in over 200 schools and is present in 4 countries. The company has recently launched its Spanish courses and is looking to expand its language offerings.

### **Number of users**

The company claims to teach Mandarin and Spanish to approximately 40,000 students per week.

### **Price**

The fees depend on the size of the classes and the duration of the course. The company offers the possibility of a free trial lesson.



### How does it work?

The students are connected to a teacher based in China and follow an interactive online course through a screen/beamer. The « official » class teacher is invited to stay in the room and will also participate in the class and learn Mandarin. Students and teachers also have access to a platform where they can access exercises to do at home or during a group work session.



# Meg Languages: Remotely learn mandarin and spanish

### **Advantages**

- Meg Languages provides Mandarin and Spanish courses through video-conference and course materials. This saves resources for institutions and teachers.
- The solution offers learning solutions for students but also for teachers. Students and teachers learning at the same time can offer an unusual and unique experience by breaking down hierarchies.
- Most institutions in developed countries are already equiped to provide these courses (computers, projectors, internet connection, etc.).
- Access to homework and exercises outside of scheduled lessons.
- Planning of fixed courses according to the needs of the training institution (daily, weekly, monthly).
- This change of pedagogical support allows the student to leave their comfort zone and can represent a good basis for education on the major trends in the world of work (digitalisation, hybrid work, etc.)







# Meg Languages: Remotely learn mandarin and spanish

Meg is a solution for introducing a Mandarin and Spanish language learning programme via video conferencing used in classrooms.

The solution has significant advantages for a school:

- Meg Languages is a all-in-one easy to implement learning programme which doesn't require the need to hire a skilled inperson teacher.
- Opportunity to provide a rich educational experience for the institution's teachers and thus **develop in-house skills.**
- Possibility of expanding the range of courses on offer and increasing the attractiveness of the institution through a more varied teaching programme.
- Possibility of **amortizing investments in IT equipment** (computers, overhead projectors, tablets, etc.) by increasing their use.

However, the solution has some disadvantages :

- The fact that courses are given by video-conference with a teacher several thousand kilometres away can greatly reduce student student's engagement in learning.
- The physical distance also makes it difficult to **create links** between the teacher and the learners. These links can be a motivating factor in learning for students.
- There are many potential **computer**, **network or hardware quality issues** that can **affect the quality of the course**. Sound, internet connection or image problems could occur at any time and reduce the quality of the learning.











# **EngageVR: Meetings via virtual reality**

EngageVR is a virtual reality communication platform created by the start-up Immersive VR Education. Its aim is to facilitate creativity, learning and collaboration in virtual reality.

### Туре

Tool for organising meetings using virtual reality technologies

### **Competitive advantage**

Improved immersion of the user in distance learning or meeting situations.

### Price

3 types of subscription:

Free : Maximum 3 users, limited room access, 1 host per session Plus: 5€ per month, room hosting up to 20 users, unlimited room access

Companies and institutions: Customised offer

### Number of users

The company has over 100 institutional clients including Abbot Laboratories, Facebook, KPMG, MongoDB and the US State Department.

### **Stage of development**

The platform was launched in 2018 and it has continued to grow. It has been used as one of the core applications in HTC's "Vive XR" suite. On 22 June 2021, the company announced its intention to develop a new metaverse (fictional virtual world) following a EUR 9 million fundraising.



### How does it work?

The user connects to the application on his device with their login details. They can then personalise their avatar.

Finally, they can join a room create an event or create their own. During a meeting, users can perform a multitude of actions: move around the room, speak into the microphone, draw, manipulate objects, broadcast presentations or Youtube videos, etc.



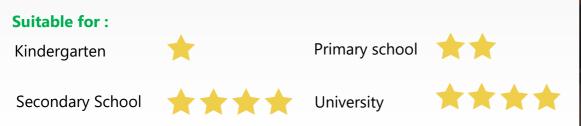
# ACCEUIL PRECEDENT SUIVANT

# LEARN THROUGH EXPERIENCE

# **EngageVR: Meetings via virtual reality**

### **Advantages**

- Easy to use, the user is guided through the introduction to the platform and a large number of explanatory resources are made available on the internet.
- Good virtual reality experience facilitating user immersion according to feedback.
- Can be an interesting alternative to traditional meetings but especially to video-conferences.
- Large number of possibilities for creating 3D content (objects, rooms, equipment) via the editor. Many tutorials are available to help you get started with the editor.
- Solution compatible with both VR and non-VR devices
- Features include the possibility to write on boards, to create diagrams and collaborative drawings, to manipulate 3D objects, to broadcast slides and to broadcast Youtube videos.
- Accessible in terms of price, a "Plus" subscription costs EUR 5 per month.











# **EngageVR: Meetings via virtual reality**

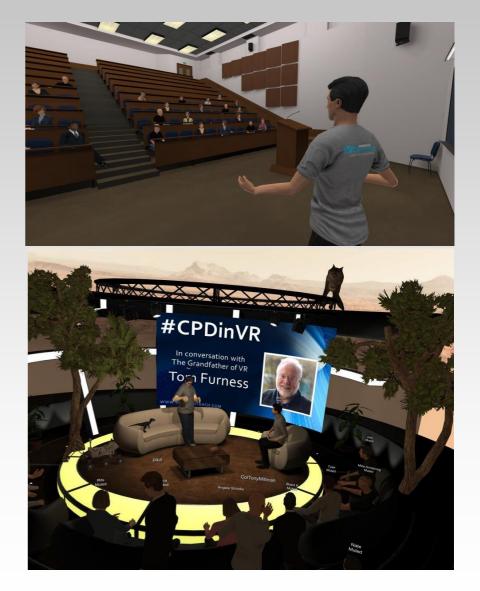
EngageVR is a virtual reality communication platform to organise meetings and events.

The solution has many advantages for teachers and academic institutions like:

- Educational institutions can organise more immersive and interactive distance learning courses and improve student attention and participation. There are several interesting features. Student can for example draw diagrams for more engaging conversations. By offering adaptability and creativity, this solution can enhance distance learning and make it more effective.
- With the help of EngageVR, training institutions can carry out practical demonstrations without having to invest in physical logistics. Indeed, the editor offers the freedom to create 3D objects that can then be used on the platform. Through extentions, complex objects also be created such as engines or small aircraft for example.

However, the solution has certain limitations :

- The use of virtual reality requires **investments including very expensive hardware**, like in VR headsets but also computers/tablets.
- Although it is easy to imagine that students are enthusiastic about taking a course in virtual reality, it is difficult to know whether they will enjoy the experience in the **long term.**
- Reality and virtual encounters can hardly replace the pleasure of a physical meeting and the creation of links that result from it. In a course whose philosophy is to generates social links, such a solution is complementary but cannot be substituted.
- The **editor** tools is relatively **complicated**. It is likely that academic **institutions** will have to **invest in resources** and that **teachers** will have to **invest time** if they wish to **adapt** the virtual classrooms to their specific needs.





# **ArtCentrica: High quality masterpieces**

Artcentrica is a digital platform to view works of art from a device. The added value of this solution is the quality of the image offered in the classroom in high definition (400 MegaPixels to 10 GigaPixels).

### Туре

Knowledge-acquisition platform for observing works of art from a distance.

### **Competitive advantage**

Access a database of works of art in very high quality and at a distance.

### **Stage of development**

The platform currently offers more than 1500 works of art exhibited in 7 museums around the world, including the MET, Brera and the Istituto Grafica.

### Number of users

No relevant information could be identified in this respect.

### **Price**

3 subscriptions: School and university: EUR 1,350 per years Research package: from EUR 80 per years Collections / create your package: from EUR 80 per years

### How does it work?

Users have access to a platform where they choose the museum whose works they want to see and then the works they want to see in high quality. Users also have the possibility to "compare" two works of art or to search the works thematically (body part, character, clothes, etc.). Learners can also obtain information on the symbolism of the major works presented.



ARTCENTRICA

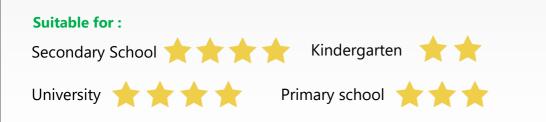
Link https://www.artcentrica.com/



# **ArtCentrica: High quality masterpieces**

### **Advantages**

- Access to an extensive catalogue of artworks and various museums around the world.
- Intuitive and ergonomic platform, possibility to search for works by artist, historical period, museum or by theme.
- Use of outstanding photographic technologies offering very high image quality and impressive zoom capability.
- •
- Access to information on the symbolism of the works and the major trends presented. This information is divided by age category (Primary school / Secondary school - High school / Universities)
- Possibility to compare several paintings and other works of art
- Enables users to view works of art without travelling and without the logistics associated with such an activity





ARTCENTRICA



# **ArtCentrica: High quality masterpieces**

Artcentrica is a platform for viewing artworks at distance.

The solution has significant advantages :

- With the help of this tool, educational institutions can introduce their students to artworks by great masters at a medium cost and without travelling. In addition, the information and explanations provided on the platform offer students and teachers the opportunity to enrich their knowledge of the history and symbolism of art.
- Due to its intuitive and playful interface, students can freely and proactively navigate through the platform and thus develop their knowledge of the artists, symbols or themes that interest them particularly. In this situation, the teacher has more time to explain and guide the students.
- The content is **regularly updated.** ArtCentrica could potentially offer an extremely **complete** and **interesting** catalogue. This regular enrichment of the content would allow teachers to use this platform as a **course in the long term.**

However, the platform has several disadvantages:

- The **subscription fees** can be a significant obstacle to the use of the solution for training institutions. Indeed, they will have to pay the **sum of €1,350** for a one-year subscription. This amount, although relatively high, **remains minimal** compared to the potential costs related to museum visits.
- Can one really fully **appreciate** an artwork by a great master through a **computer or tablet screen**? It is **unlikely** that using this platform will **replace a visit to a museum** and evoke the same emotions as admiring a work of art in front of you.



IARTCENTRICA











# EVOLUTION OF EDTECH BUSINESS MODELS

Prospective monitoring December 2021 by Geneva Intelligence



# Summary of the December 2021 Edition



Definition of Edtechs



Methodology





**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

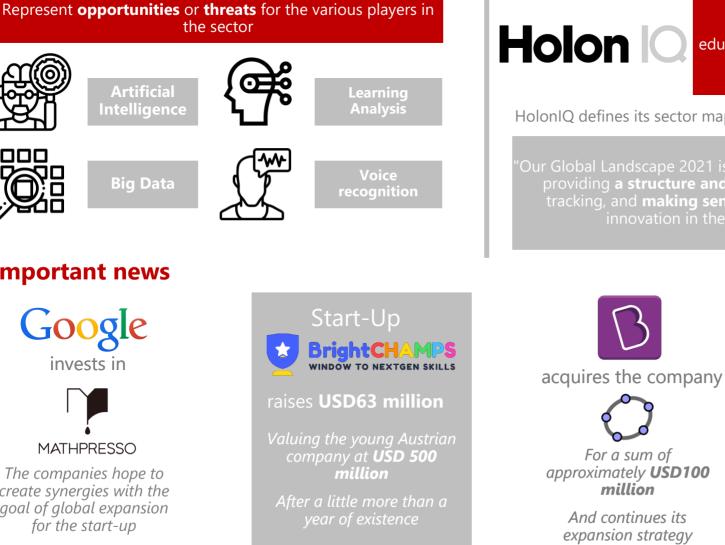




# **Edtech Trends Analysis**



## Main technological trends



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

**TARGET** GI OBAL

invests in the

start-up

As part of its USD 47

millions Round B

lepaya

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

## **Important news**

The companies hope to create synergies with the aoal of alobal expansion







# **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.

### Туре

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.



### 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.

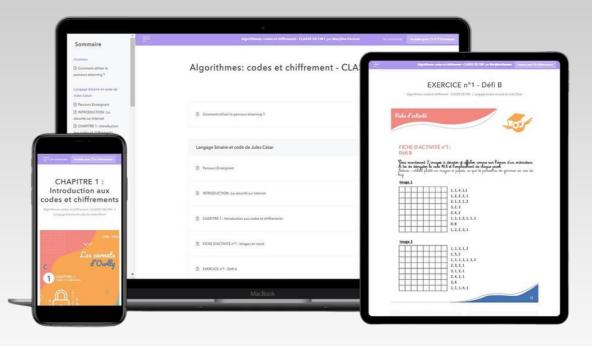
The institution can also request access to digital or physical educational resources. Students have the option of registering for extracurricular workshops that will take place in predefined training locations or online.



# **DigitOwl: Digital workshops without screens**

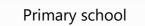
### **Benefits**

- 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:







High School 🔶





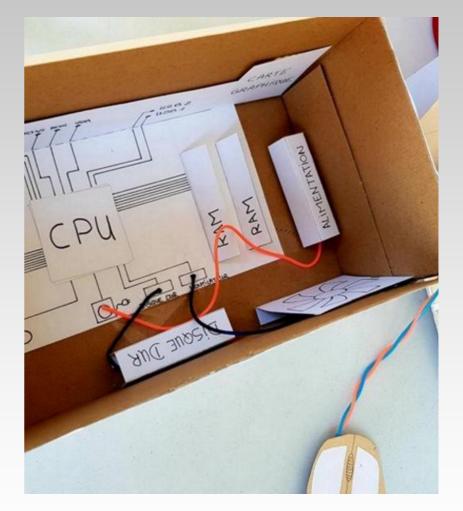
# **DigitOwl: Digital workshops without screens**

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.**



# ACCEUIL PRECEDENT SUIVANT



### 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.

### Туре

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.

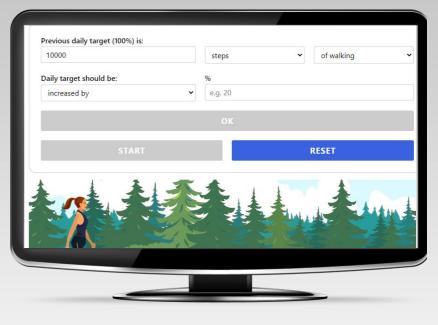
### Level of development

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 cofounded 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.







## 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.

c	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	<u>Contact us</u> to get worksheet for this experimentation
		– 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.	<u>*</u> 7
	Common fractions	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.	<u>Contact us</u> to get worksheet for this experimentation





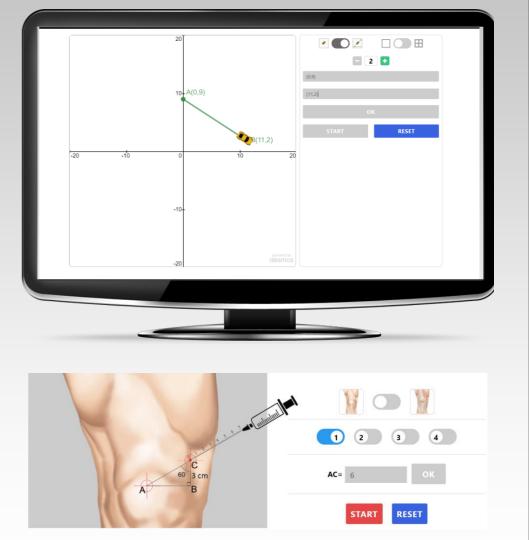
### **Dartef: Discovering the real applications of mathematics**

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.

### Туре

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.



### 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.

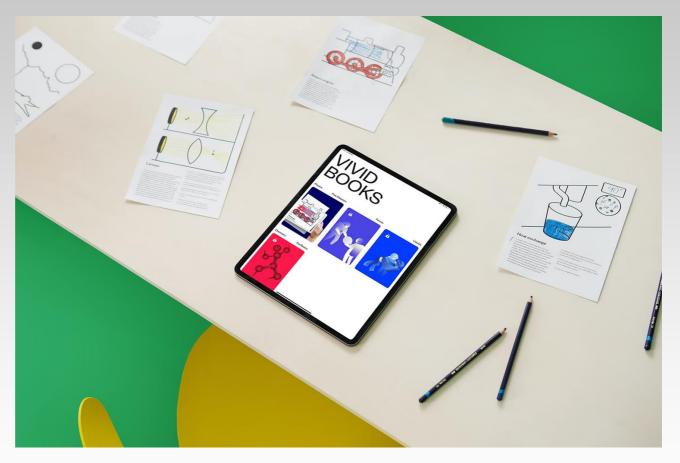


# ACCEUIL PRECEDENT SUIVANT

# 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

# ACCEUIL PRECEDENT SUIVANT

# **VividBooks: Textbooks in augmented reality**

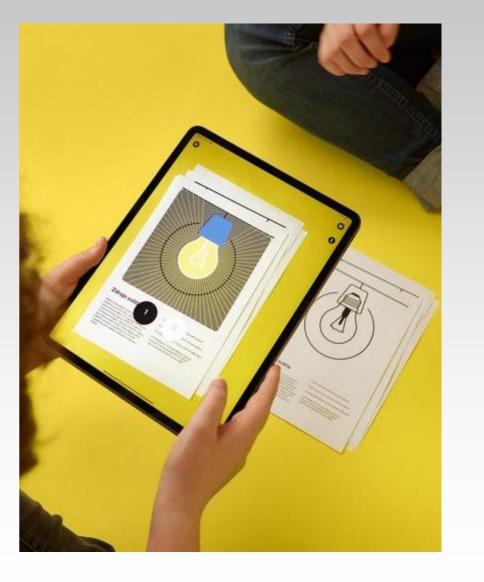
VividBooks are textbooks that integrate augmented reality and Active Learning to increase student engagement and understanding of science subjects.

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.

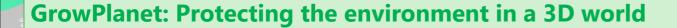
However, the solution could be improved in some aspects:

- 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.



BOOKS





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.

### Туре

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

<u>Class up to 35 players</u>: 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.



### 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.



### **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 ٠ 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 $\uparrow$ Primary school $\uparrow \uparrow \uparrow \uparrow$ High School $\uparrow \uparrow \uparrow \uparrow \uparrow$ University $\uparrow$







## 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.** 

# TEASER New engaging level in the making







## **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.

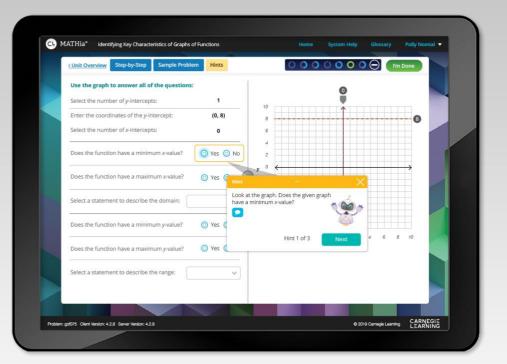
In 2021, the independent American institute Saga Education conducted a study testing 5 adaptive-learning platforms in which MATHia obtained the best results.

### 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.



### How does it work?

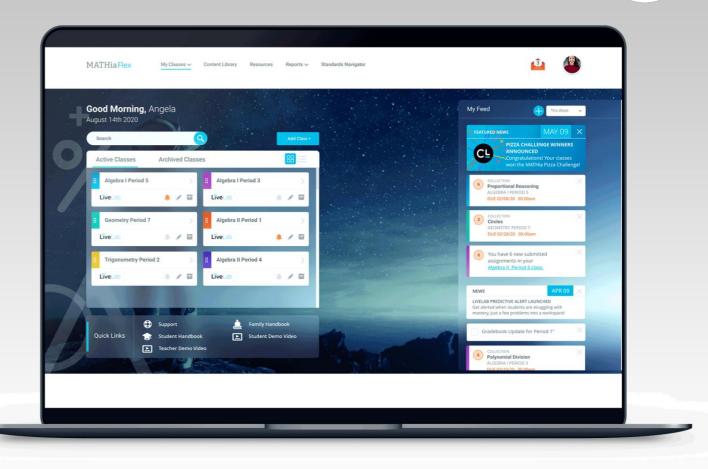
Students have access to a platform containing mathematical exercises in the form of mini-games. They are accompanied by "Mathia", a little character who will be their partner throughout their learning process and who will offer them a personalized course.

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: 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.



mathio





## **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.



mathic

