THE 21ST CENTURY
THE FUTURE OF EDUCATION: REINVENTION
Introduction

Students don’t just go to school anymore. They’re stepping into a virtual classroom where they can practically go anywhere and interact with anyone, right where they are. With technological advances constantly disrupting nearly every industry, the education sector has come a long way, from students being stuck at a desk staring blank at a chalkboard, to actively learning by collaborating with peers and taking virtual trips to, well, anywhere.

Emerging technologies in the education sector make information more easily accessible to students and teachers, and is important to take into consideration when it comes to underprivileged communities where learning resources are scarce. With attention spans running short nowadays, it’s essential that the education industry caters to this generation of students with learning techniques that work best with the current digital climate. This makes sense considering that technology has been a major part of our everyday lives since the birth of the digital era.

Moreover, teachers are using technology to improve lectures and reinforce lessons, benefiting students in the long run. Teachers are starting to embrace the use of digital tools in the classroom, and students are reaping the benefits with engagement and work performance improving significantly.

In some ways, education was stuck in a rut prior to the digital age, with disengaging and repetitive learning techniques, but now, it’s taking on a whole new look and students are more engaged than ever before. Fortunately, teachers are starting to recognize the value of digital learning, and it’s evident that students are more respondent to digital techniques, considering that virtually all of our activities are technologically driven.

Educators were once restricted to teaching right out of the textbook, which is not the most effective way to engage students. Past learning techniques put pressure on students to rapidly receive information, but fail to retain it, resulting in plummeted test scores. Furthermore, there were limited opportunities for students to receive one-on-one interaction and direct feedback from teachers. With students dropping out of high school at significant rates (1.3 million a year according to a Knewton infographic), it’s only in the best interest of schools to start implementing the use of modernized learning tools in order to improve engagement and stay ahead of the digital transformation.¹
When students are forced to cram in an attempt to learn the material quickly, the idea was quickly adopted. However, PowerPoint presentations and posted materials do not allow for active learning. Sams, uncovered software to record and engage in activities during class, making it possible for students to engage in hands-on activities in the classroom instead of focusing on repetitive tasks. This method makes it far more beneficial for students to engage in hands-on activities that mimic real-life issues. "These virtual worlds provide a unique opportunity to apply new knowledge and make mission-critical decisions," said Aldridge.

Flipped Classrooms

Unlike traditional online classes, MOOCs are typically free of charge, and students rely on each other by forming study groups and students do not receive credits. In contrast, MOOCs and traditional online classes are more similar. Even so, there are many schools currently putting these methods to good use, including the flipped classroom concept, more than 50 years ago, which has been gaining in popularity in the education sector, and is slowly but surely becoming more widespread. According to a Knewton infographic, it all started when students were given enough time to make note of the content. Only technology can make this possible.

Gamification

Gamification helps students gain valuable skills, as the games often include critical thinking and problem-solving challenges. According to Stefanini, the education industry has been revolutionized with the implementation of digital transformation. Considering we live in a digital world and students are accustomed to technology, it is essential to incorporate technology into the classroom. Gianpiero is a great example of how technology can be used to make the learning process more fun and engaging.

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The results? Improved learning outcomes. According to a Knewton infographic, it all started when students were given enough time to make note of the content. Only technology can make this possible.

The most obvious distinction between MOOCs and traditional online classes is cost efficiency. MOOCs are typically free of charge, while traditional online classes require a significant investment. Furthermore, MOOCs typically have a larger student body, making it nearly impossible to provide personalized instruction. On the other hand, traditional online classes can provide more personalized instruction, as the teacher can spend more time with each student.

Additional benefits of MOOCs include increased collaboration and communication. MOOCs allow students to work together on projects and share ideas. Additionally, MOOCs provide a way for students to improve their feedback electronically and discussion boards are monitored by teaching assistants.

The future of education is likely to involve a combination of MOOCs and traditional online classes, as each has its own unique benefits. MOOCs offer a cost-efficient way to provide education to a large number of students, while traditional online classes provide a more personalized learning experience. It is likely that the education industry will continue to evolve, incorporating new technologies and methods to improve the learning experience for students.
Factors Driving Digital Transformation in Education

Considering we live in a digital world where technology facilitates many of our day-to-day tasks, it’s a no brainer why the education industry has incorporated digital tools into classrooms. Here are some of the factors driving digital transformation in education:

- Demand for personalization
- More engagement
- Better results
- Improved feedback from teachers
- Convenience
- Greater access to information
- Better communication between students and teachers
- Increased collaboration
- Cost efficiency
Technology Trends in Education: K-12 & Higher Education

The rise of several technological trends are forcing educators to change their teaching strategies, from K-12 to higher education. With every student learning at a different pace, teachers can hone in on the unique needs of each individual student. Some of the current trends in education include:

Artificial Intelligence

Artificial intelligence (AI) enables personalization, and is slowly but surely becoming more prevalent in U.S. education, with an expected growth of 47.5 percent from 2017 to 2021, according to the Artificial Intelligence Market in the U.S. Education Sector report.

At some universities, students have access to 24-hour virtual advisory services, as well as chatbots that assist with homework and complicated paperwork. Additionally, the concept of blended learning gives students more control over their learning methods rather than relying on direct instruction from the teacher. This gives students a sense of independence, allowing them to make their own discoveries. Similarly, adaptive learning gives students the opportunity to move at their own pace through the curriculum, further promoting personalization as it gathers information from students as they’re answering questions, providing feedback in a split second.

A challenge that teachers and professors face is the ability to focus their attention on students’ individual needs in multiple classes. AI can alleviate these challenges, as many educational institutions either currently have or are in the process of developing AI platforms that can pinpoint gaps in knowledge. In the future, machines could acquire the capability of reading students’ facial expressions to be able to identify whether they’re struggling to absorb certain concepts and then adjust the lesson accordingly. Moreover, AI can save teachers time on performing administrative tasks so they can spend more time with students.

AR/VR/MR

Another digital transformation trend is the use of advanced technologies, such as augmented, virtual, and mixed reality. Such technologies encourage student collaboration and interaction with each other and people across the globe. There are a host of VR apps out there that aim to make the learning process more fun, engaging and effective. One of those apps is Unimersiv, a VR app that can transport students to anywhere in the world. Cospaces is an app where students can create their own VR to share with the world.

The VirtualSpeech app equips students with the tools they will need in the future by providing them with practice in fundamental business skills such as public speaking, job interviewing, networking, etc.

Redesigned Learning Spaces

The look of classrooms have changed drastically. Chalkboards are starting to become obsolete, as today’s schools are opting for SMARTboards. Furthermore, to encourage collaboration, many classrooms now have SMARTdesks instead of traditional, individual desks. As previously mentioned, advanced technology is taking students on a virtual journey outside of the classroom, and slowly departing from boring, disengaging lessons that use repetitive learning techniques.
Flipped Classrooms

The concept of a flipped classroom is that teachers post lectures for students to view at home and engage in activities during class. The results? Improved learning outcomes. According to a Knewton infographic, it all started back in 2007, when two teachers from Colorado, Jonathan Bergman and Aaron Sams, uncovered software to record PowerPoint presentations and posted them online for absent students. After promoting their methods to teachers around the U.S., the idea was quickly adopted.¹

When students are forced to cram in an abundance of information from a lecture, it reduces their ability to retain that information, making homework a frustrating task. It’s far more beneficial for students to engage in hands-on activities in the classroom instead of sitting through a long lecture, which can be overwhelming and difficult to grasp all at once. Plus, students have the opportunity to ask questions immediately. Watching the lecture at home acts as a refresher and allows students enough time to make note of any questions they may have regarding the content. Only technology can make this possible.

There are many schools currently putting these methods to good use, including Clintondale High School in Clinton Township, Michigan. Prior to adopting the flipped classroom concept, more than 50 percent of freshmen failed English, with 44 percent failing math. After making the switch, only 19 percent of freshmen failed English, with 13 percent failing math. That’s a significant difference.¹
Gamification
Gamification is becoming increasingly popular in the education sector, and incorporating it into the classroom is a sure way to make the learning process more informal and engaging. According to Susan Aldridge, senior vice president of online learning at Drexel University in Philadelphia, gamification helps students gain valuable skills, as the games often mimic real-life issues: “These virtual game worlds provide a unique opportunity to apply new knowledge and make mission-critical decisions, while identifying obstacles, considering multiple perspectives and rehearsing various responses.”

Massive Open Online Courses (MOOC)
If you have internet access, you can enroll in a MOOC. It’s that simple. Unlike traditional online classes, MOOCs are typically free of charge, and students do not receive credits. The most obvious distinction between MOOCs and traditional online classes is that they have an incredibly large number of students, making it nearly impossible for teachers to attend to the needs of each student. So instead, students rely on each other by forming study groups. MOOCs are lecture based, with short-form videos lasting no longer than 12 minutes. Instructors provide feedback electronically and discussion boards are monitored by teaching assistants.
**Stefanini’s Prediction for the Future of Education**

With our knowledge and expertise paired with deep research and analysis, we predict that the future of education will be one that is driven by the advanced technologies mentioned above, particularly AI. However, it’s important to note that despite the surge of such technologies, teachers are still a critical component to education despite their shifting roles because the act itself is truly an art form that technology just hasn’t mastered. According to The Guardian, empathy is one important aspect of teaching that technology lacks, as only humans are able to “pick up on a multitude of contextual clues to determine and respond to the emotional states of others.” Moreover, machines are incapable of thinking on the spot the way humans can. This is important considering that many things can go wrong unexpectedly throughout the school day. So while technology is and will continue to be used in the classroom, teachers can rest assured that their jobs are safe.

At Stefanini, we’re constantly thinking about the future and aim to stay ahead of the digital transformation. As for the future of higher education, we believe that colleges and universities must prepare for change sooner rather than later. ISG Partner David Hemingston writes in an article regarding the drastic changes colleges and universities are currently facing. According to Hemingston, the factors driving change in higher education include competition from private and for-profit universities, new expectations from the current student demographic, rising tuition costs, and regulation. If colleges and universities want to survive the digital transformation, Hemingston suggests they start preparing for change and staying abreast of the latest industry trends. If higher education institutions adopt these strategies, they will find success, but the key to maintaining success is staying one step ahead of the competition considering the rapid evolution of technology.
When students are forced to cram in an abundance of information from a lecture, it reduces their ability to retain that information, making homework a sure way to make the learning process impossible for teachers to attend to the dynamic of co-creation that has brought to the forefront the essence of what we propose to accomplish together with our clients and society in general: to co-create solutions for a better future.

One of these solutions is Sophie, an AI platform fully developed within Stefanini’s research and development labs. Sophie is built to handle high-demand environments by the people who understand them best. Furthermore, we recently reinforced our digital retail offer with a broad portfolio of solutions tailored to help retailers face the challenges of a new era. Moreover, we offer end-to-end Salesforce services that provide strategies to expand the capabilities of clients’ enterprise CRM systems, as well as cloud-based consulting for ServiceNow and CA, transforming your cloud infrastructure. In addition, we offer SAP support with HANA, predictive analytics, AI with Sophie, design thinking, Fiori and digital transformation.


Stefanini is a global IT services company with over 24,000 employees across 77 offices in 40 countries across the Americas, Europe, Africa, Australia, and Asia. Since 1987, Stefanini has been providing offshore, onshore and nearshore IT services, including application development and outsourcing services, IT infrastructure outsourcing (help desk support and desktop services), systems integration, consulting and strategic staffing to Fortune 1000 enterprises around the world. In an exercise that connected more than 450 leaders in several countries in which we operate, we have created a dynamic of co-creation that has brought to the forefront the essence of what we
How Education is Important to Us
In the last two years, Stefanini has grown 15 percent in the U.S. education sector. After working so many years with a plethora of clients, we have gained expertise and understand the needs of the education environment. See below Stefanini’s current clients in the education industry:

DeVry University
Southern New Hampshire University (SNHU)
Career Education Corporation (CEC)
Adtalem Education

Driving Digital for Educational Leadership
We know that the challenges of the new digital age reach across all areas and markets, and we believe that digital transformation begins with the change of leadership mindset. With the goal of better preparing executives and leaders to understand and extract the best opportunities of digital transformation for the education sector, Stefanini, in partnership with INSEAD offers an educational experience that enables executives to develop the abilities they need to change mindsets, keep up with industry disruption, and inspire their teams with new and innovative perspectives and capabilities. With a satisfaction rate of 98 percent, our leadership program will deliver relevant, actionable, and transformative change.

Partnership with Stefanini Scala
In partnership with Saint Paul Business School, Stefanini offers a disruptive platform that allows students to clear up doubts any time of day from anywhere with the help of AI. On top of offering extensive content and precise answers, the platform allows the student to follow their own development in the course and share their experience on a social platform made exclusively for students.

Stefanini Scala is responsible for the implementation of the IBM Watson technology and the creation of the chat, which allows the student to ask questions to the “24-hour professor.” This project is part of a continuing education program called LIT, which works similarly to a Netflix membership offering access to vast content and allowing students to direct their education toward specific
How Stefanini Can Help

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The platform is also capable of identifying strengths and weaknesses in each student and offers a personalized educational path. It’s also able to determine the student’s personality through their way of writing and social interactions. Above all, it’s democratic. The membership costs $26.50 a month, which allows millions of Brazilians access to quality education.

Get to Know Paul, the “24-Hour Professor”

Development: Created with IBM Watson technology and implemented by Stefanini Scala, a Stefanini affiliate.

Training: Before Paul could teach, it needed to learn. Saint Paul professors programmed the platform to explain and answer questions about accounting, innovation and creativity, and administration and finance.

Cognitive Computing: When a student asks a question, Paul uses language processing to understand the question and offer one of the answers previously prepared by the Saint Paul professors.

Non-answered Questions: If Paul does not know the answer, professors are available to help in person. Afterward, the questions and answers are inserted into the platform for a continuous process of improvement content guardianship.

Personalization: Paul is able to capture insights about student personality and suggests the best ways of learning.

Other Digital Solutions for Education

Customer Experience: Innovating the student journey interacting with the educational institutions by leveraging the use of social media and digital channels.

Smart Buildings: Supporting educational institutions to improve building and asset management, energy consumption through the use of sensors/IoT, predictive analytics and maintenance.
Sources


