



FROM
TREND TO
REALITY

THE FUTURE OF TECHNOLOGY IN EDUCATION

Blended learning, co-creation, student-centricity, lifelong learning, gamification, virtual classroom. We create order out of the *buzzword* chaos. These trends will shape the future of education.

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FROM TRENDS TO REALITY IN EDUCATION



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Almost 185,000 miles per second. That's the speed of light. And the pace of change in our world. Globalisation, internationalisation, digitisation and personalisation are major trends, transforming every aspect of our society... including education. Today's students are tomorrow's professionals. Educational establishments play a vital role in preparing them for the jobs of the future.

And then *BAM*! Along came Covid-19. This resulted in educational establishments having to embrace the future, full throttle. Because of coronavirus, digital trends in particular have found their niche in the curriculum at lightning speed. From gamification to virtual classrooms – we can no longer think of this as a 'trend', as it's becoming reality. *Mark our words.*

Ready for our crash course on the future of technology in education?



Bring it on



I'm not sure

Is your head spinning yet? Don't worry. As an educational establishment – and as a tutor – you are, of course, not alone in the jungle of blended learning, personalised learning, serious games, badges, innovation labs and distance learning.

What part do we play in your journey to the education of the future? After reading this useful whitepaper, you will be totally up to speed. You will read of the changes that lie ahead and what you need to think about before diving head first into a new trend. The future of technology in education? #interestin #cantwait #ideallytoday #bringiton

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THE WORLD IS CHANGING, TWEAK YOUR EDUCATION



Data Scientist. Product Owner. Growth Hacker. Content Creator. Drone Pilot. Innovator. AI Specialist. People who are now in their thirties would never have guessed, back in the 1990s, that they would have these types of jobs now. They completed their education, but no training could ever have prepared them for this type of work. The education model is changing, as is the division of roles between teacher and student. Soft skills are becoming increasingly important, as is the ability to use digital resources.

“In the future, no less than 65% of primary school pupils will have a job that doesn’t exist today”,

David Price, thought leading futurist.¹

Below are the trends at a glance:

1. Soft skills take the helm

Europe is on the verge of a major shortage of a well-trained workforce. Not necessarily about skills like being a maths whizz (though that is, of course, also important), but about soft skills in particular. College and university students must master these skills to ensure they are properly prepared for a rapidly changing labour market. Educational establishments would be well advised to not only focus on developing knowledge (because who knows what the consensus will be about a specific topic in ten years' time), but also on acquiring those wide-ranging soft skills. This is nothing new: for years primary schools have been working hard on *21st century skills* and teaching children to think creatively and work together. Figures show that these are important skills: eight out of ten British employers says that employees lack these competencies.

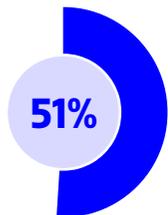
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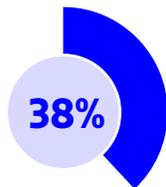
Breaking news... Michael Burke is a Professor of Rhetoric at Utrecht University and is calling for critical thinking and public speaking to be infused into core curriculum. These skills will soon be incorporated into medical training, as it is extremely important that doctors are able to communicate clearly with their patients.²

Soft skills most in demand:

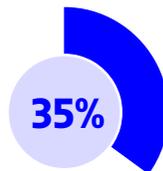
Problem-solving



Ability to work in a team



Digital literacy



However, eight out of ten employers have identified a gap between the skills they would like to see in an employee and what the employee can actually offer.¹

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2. The student takes centre stage

As the world is changing, so is the division of roles between tutor and student. In the main, Millennials and Generation Z want to be in control. That's only logical as these young adults were raised in the experience economy, with highly personalised marketing. In short: everything 'as-a-service' and 'on-demand', with CoolBlue, Netflix and Uber. Today's student is discerning, used to being in control and therefore also wants to map out their own educational career, decide which subjects to take, how to do that and at what pace.

The focus is therefore on the student. Even more so in the educational model of the future. This is also reflected in digital personal learning environments, in which many students already work and track their progress. Some colleges and universities for example, have already reached this point; they use the data extracted from learning analytics to further personalise education for individual students. That's because technology enables you to gear an adaptive learning environment even better to a student's individual pace and level.

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3. And the teacher?

Students are becoming more independent and self-reliant. They personally take charge of their educational path and future career, hence teachers are increasingly moving away from the traditional model of teaching and becoming facilitators or coaches.

The Biomedical Sciences degree at the University of Leiden uses the *Flipped Classroom* model. Prior to a lecture, students acquire knowledge about a subject through independent learning. This enables a higher level of interaction during the lecture, as students can ask specific questions and debate the topic.³

When the focus is on the student, he or she isn't thrown in at the deep end. As we're using analogies anyway, as an establishment or teacher, you're not just the lifebuoy, but the lighthouse which illuminates the path to the destination and gives the student direction. As a teacher, it's your job to 'deliver' a young professional who is ready for the workplace of the future. With dry feet.

4. Lifelong learning will become the benchmark (yes, really!)

Still on the subject of learning – it will no longer have an expiry date. Reskilling and upskilling are becoming an inherent part of a career. Technological developments force employees to take a lifelong learning route in order to keep pace with their profession. It's not just about boring theory (thank heavens ;)), but about methodologies, new perspectives or mastering new digital tools, allowing them to do their work better and more creatively. Another reason why, in addition to the bedrock of traditional knowledge transfer, schools, colleges and universities should also focus on teaching skills which enable students to cope with societal challenges. Increasing numbers of education establishments are therefore offering modular courses and short programmes for both full-time students and working professionals.

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Lifelong learning: can also be combined with a baby, a job and open-water swimming



Fun fact... The Ministry of Education, Culture and Science in the Netherlands (OCW) wants to facilitate flexible participation, allowing working adults to harmonise training and education with peaks and troughs in their working and private life.

Busy with your offspring, your new job or perhaps you'd prefer to go open-water swimming three times a week at elite level? Studying in phases, stopping temporarily or accelerated learning will all be possible in the future. Go OCW! #happyaboutit²

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5. Internationalisation changes education

Internationalisation in education has been around for some time. In the 1990s internationalisation involved student exchanges and intercultural learning. Since the 2000s, it has become increasingly important to attract international diploma students to follow some programmes of study. The different views on certain subjects of both students and tutors with different cultural backgrounds encourage debates during lectures. Conversely, it is important that more students follow (a portion of) their course abroad. By doing so, they prepare themselves for the future labour market that requires intercultural skills (amongst other things).

In recent years, new types of internationalisation, such as Transnational Education (TNE), *massive open online courses* (Moocs) and 'blended' types of learning have become more and more important. The very different types of *internationalisation at home* are focal points in the internationalisation policies of increasing numbers of colleges and universities.

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LET'S TALK DIGITAL



Virtual training room of CTOUCH

If you talk about digitisation in education, you are talking about blended learning, hybrid learning, virtual classrooms and, therefore, also distance learning. Terms that are now increasingly anchored in education. But these are terms that do not have the same meaning at every school, college or university.

Blended learning, hybrid learning, flipped classroom... what's the difference?

Blended learning is a form of learning that takes place both online and in a physical location. Both forms are integrated into a cohesive learning experience for the student. The face-to-face contact between teachers and students is not replaced by online training. The online aspect usually comprises exercises that supplement lessons in a classroom.

The term 'hybrid learning' is often confused with 'blended learning'. In hybrid learning, however, most of the course is online. The difference is that the face-to-face contact between tutors and students takes place as an online interaction.

Flipped classroom is a different type of blended learning. The student is first taught through e-learning or through an online presentation, in which they can become acquainted with the new course material. They will then attend classroom-based lessons where the course material can be expanded on, in the form of discussions or problem-solving.

Just like in the real world: a virtual classroom

For those establishments where 'the blend' still mainly consisted of traditional teaching, in the year 2020 there was a swing in balance to digital as a result of corona. Every establishment had to have faith in this new approach. From online lectures to virtual classrooms: establishments are currently providing digital education in every conceivable way. Virtual classrooms perhaps still closely resemble a traditional lecture theatre, and the interaction between teacher and students seems almost real. #highlyrecommended

Unique online training concept

CTOUCH's virtual training room, located in the Innovation District in Eindhoven, is one of the few of its kind. The training room is built in cooperation with partners Barco and Kinly. A special feature of the room is its unique integration with touchscreens. In this room, companies and educational establishments can organise real-time, training, interactive meetings and classes with co-workers or students.

LET'S TALK DIGITAL

Learning like never before

In our view, that accelerated digitisation forced by corona is an excellent development. We all know that the new generation of students learn and work like no generation before them. They are easily distracted, but they are also quick thinkers and are always critical of the information they receive. A generation that needs a smart – blended or hybrid – educational mix of offline and online teaching methods, in which they discover, learn and play, instead of receiving and memorising ready-made solutions.

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6 reasons to go digital:

1. Study independent of time and place
2. Facilitates the transition to open science
3. This is how you can really put the student centre stage
4. A perfect tool for a customised approach, for offering modular courses and turning personalised learning into adaptive learning
5. Digital is a true enabler for new methods of learning
6. Spend contact hours on knowledge transfer? No longer necessary. When you see one another 'in real life', it's time for discussion, broadening the debate and for connecting theory to current social events.



LET'S TALK DIGITAL



Boost your creativity with these ingredients for digital learning::

Virtual Reality: Introduce students remotely to lab facilities, train medical students virtually by simulating surgical procedures, allow law students to put their case forward in a virtual court, or send archaeology students virtually to a dig to gain experience.

Artificial Intelligence (AI): Match adaptive online course materials to the level and pace of individual students. The AI 'learns' from each assignment completed by a student and then adjusts the next assignment accordingly.

Serious Gaming: Present course material to students and teach them soft skills through a serious game. Basically this is just a learning tool under the guise of a computer game. Nowadays there are quite a few games that link in with various courses.

Gamification: Introduce a motivational game element to your lessons or lectures and let students earn badges (also known as microcredentials) through their progress in games or interactive course material. You would simply divide the course material into bite-sized chunks, and attach a learning objective to each chunk. By allowing students to earn badges, you know exactly where your students are struggling and who is flying through the course.⁴

Interesting! Gamification in practice

Students in Human Movement Sciences at the Vrije Universiteit in Amsterdam were having difficulty passing the biomechanics module in their first year. This is mainly because it takes a lot of time and practice to develop the required skills. To motivate students to work on this module at home, they are given exercises in the form of a game. This game involves levels, difficulty degrees and rewards. That proved to be successful. And the students love it too.⁴

Pitfalls – watch out for the following when going digital:

1. Don't use digital education to save time and money. This will inevitably result in simplification of your curriculum.
2. Big Brother is watching you. Improving learning behaviour and educational success, optimising courses: it's all possible with data. There is a downside. Make sure that you handle data collected from students safely and soundly, to safeguard your students' privacy.
3. Temper your expectations, because not everything has been defined as yet and that can lead to disappointment. There is still a lot of experimentation – perhaps too much experimentation – with all types of digital learning. For example, only a small percentage of participants in massive open online courses (Moocs) complete the course successfully.⁵

EDUCATION AND THE BUSINESS COMMUNITY: A PERFECT MATCH



How do you prepare students for the world of work if companies in the region aren't involved in education? Schools, Colleges and universities are therefore increasingly looking to connect with their local business community. Through innovation labs and workshops, students work on business cases in the form of projects. This enables them to become acquainted with the labour market, acquire up-to-date knowledge of relevant topics and discover which skills are needed in the real world.

Fact time! Did you know that students on the Master's course in Game Technology at Breda University of Applied Sciences discuss their progress every ten weeks with professionals from the field? The students therefore receive valuable, practical feedback.⁶

The business community can put those students to good use

Students learn a lot from alliances of this kind, which are often a form of co-creation. However, the business community also benefits from this. In its Strategic Agenda, the Dutch Ministry for Education, Culture and Science writes that the region is an increasingly important factor for economic growth and innovation in the Netherlands. Through hands-on and innovative research, education establishments can respond to and assist with challenges relevant to the region. This is therefore a valuable addition for the Dutch business community.

The teacher? Their role will change too

Intensive collaboration with 'the real world'? The business community often has knowledge that is more up-to-date than that of teachers. This again means that a teacher is becoming more of a coach. It is also evident that real-life assignments require a multidisciplinary approach. Students from different programmes often work together on a case. This approach also requires teachers who can provide the right guidance.⁶

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Resolving urban issues through co-creation

Dream teams and urban living labs are being set up around the world to tackle urban issues and devise innovative solutions for urban challenges. They want to achieve that by bringing together the city itself and the schools, colleges and universities located there. A win-win situation. Not only will the city become a better and more beautiful place, but students will be working on practical cases, simultaneously developing those 'oh so desirable' wide-ranging soft skills.²

READY FOR AN IN-DEPTH 'COFFEE CHAT'?

Admittedly, this whitepaper is rather long, but you're now aware of the trends that determine the future of your school, college or university. From a greater focus on students, to the development of soft skills, to blended learning to give distance learning more depth and a connection with your student's perception of the world around them. And finally: the importance of co-creation between students and the business community, with assignments from the professional field.

As well as discussing your weekend, you now really do have something to say at the coffee machine. Hopefully you can put this into practice soon after the corona pandemic. And otherwise, simply do it remotely, digitally, during your weekly Zoom or Microsoft Teams meeting. Nicely *on trend*.

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Hi, we are CTOUCH

At CTOUCH we strive for interactive education with a fun twist. Vibrant education that shapes the 21st century skills of students. No boring lessons, but fun and interactive learning experiences. A piece of cake with our touchscreens. We know how important 21st century skills are.

Creative thinking, collaboration and solid ICT skills; which 21st century child can be successful without mastering these and the 8 other skills? That's why we tailor our touchscreen innovation to these crucial skills. Our ambition: to co-form the leaders of the future. We are certainly ready for this challenge!

Feel free to reach out to us via:
0203 868 2240 or enquiries@ctouch.co.uk

www.ctouch.co.uk



Sources

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2. Ministry of Education, Culture and Science: [Strategic agenda for higher education and research.](#)
3. Blended Learning: [Strengthening education at Leiden University.](#)
4. [The education trends for 2019 - 2020](#)
5. Association of Dutch Universities: [Digitisation in university education: Our agenda for a future-proof curriculum.](#)
6. [Five trends for the higher education of the future.](#)

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“ A SMILE CAN PROMPT A SMILE,
EXTEND INTO A LAUGH,
AND BRING HAPPINESS TO AN ENTIRE ROOM ”

- Richard Branson

