

GCRI INTERVIEW

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What is the state of digital education in Germany today and what are the differences compared to the US?

In the US and Germany students, kids, teachers, and professors as well as the majority of employees and people in their private environments use the web for learning and training. Google and YouTube are often their first (and sometimes only) learning-resources. Video-education channels like "The Simple Club" (for school-kids) or sharing-platforms like "StudyDrive" for students, are widely used and fast growing. Additionally, there are more and more options for pre-school kids, like "[Digitalwerkstatt](#)". So, digital education is an everyday reality in Germany. But, and here is the main difference compared to the US, this behavior applies only to the so-called "informal" learning world: at home, in the afternoon, for personal use. When it comes to "formal learning" in schools, universities and in continuing education, pedagogy in Germany is for the most part like it has been 50 years ago, except maybe for the widespread use of PowerPoint instead of overhead projectors. In short: Although digital learning shapes the individual and informal learning habits, it did not yet reach German classrooms. That is certainly a simplification, but even though there is a huge political discussion currently about digital innovation, the transformation of the educational system in Germany has just started. While the availability of affordable laptops, tablets, learning platforms and software is completely normal in US classrooms, German school-kids can be happy if they can access WiFi and or a computer lab.

Of course, even more important than the lack of technology and devices is the lack of qualified and digitally minded teachers. Digitalization is a highly controversial issue – particularly in the pedagogical community in Germany.

The digital startup and EdTech scene is vast, how can we ensure quality in terms of technology and pedagogy?

First, the EdTech scene in Germany is far from being "vast", on the contrary. According to "German Startup Monitor" of 2016, only around 4 percent of venture capital investments in Germany could be allocated to the education sector - the proportion is similarly low in the rest of Europe. VCs in Germany avoid educational

start-ups, preferring investment in e-commerce or beauty apps. When Maxim and Raphael Nitsche created their exciting learning app "Math 42", they couldn't find German investors – instead they sold it to the US education provider "Chegg" for € 12,5 Mio. There are a couple of reasons for the reluctance of German investors in regards to education: Firstly, the language problem; the German speaking education markets are limited. Secondly, the German education market is not an easy market, at least not in regard to the school and academic sector. Education is considered to be a "public good", which has to be free of charge and is strictly regulated by the states rather than at the federal level. And finally, exit scenarios for investors in education are pretty unattractive in this country. Even if high sales targets could be achieved, the number of potential buyers is not exactly huge. So, the question about didactical and pedagogical qualities in EdTech is not a priority here. First of all, we need an EdTech scene worth mentioning.

Looking beyond online classes and digital media in classrooms, where else can EdTech be applied?

Without doubt, new technologies such as adaptive learning, augmented and virtual reality (VR), learning analytics and mobile learning etc. will change education fundamentally. Each segment offers huge opportunities for newcomers. Maybe, the highest potential is related to VR in continuing education, because VR is a powerful counterpart to theory and roots learning in experience. For example, technical and vocational trainings have begun integrating VR simulations into their curriculum. And other fields are catching on. Whether it is doctors virtually performing brain surgeries, or historians walking through ancient Rome, and managers practicing how to give critical feedback, time and space are no longer a constraint. Studies show, that the impact of an immersive virtual simulation experience leads to higher retention rates than simply watching videos – combined with an increase in motivation of students. So, virtual methods have the potential to radically change how learning content is being delivered and experienced: a perfect area not only for the gaming industry but also for EdTech!

Can digital education address problems of inequality in a diverse student body?

Today, more students need to learn more content than ever before, and their profiles and biographies, knowledge and language backgrounds vary immensely. At its core, digital education, particularly adaptive learning technologies and learning analytics, promise to solve this challenge: to provide knowledge more effectively and at the same time more individually; massive and tailored all at once. Algorithms can personalize learning, based on big data rather than treating everybody the same way, as MOOCs did in the early days of digitization. Today,

innovative learning diagnostics can help to establish individualized learning processes on a broad basis. I'm sure, that lots of students will benefit from it.

What role will the human component such as teachers and professors play in digital education?

Learning was, is and will be first and foremost an interpersonal process - not only when it comes to early childhood and childhood education. The personal relationship between student and teacher is always essential, especially when digital educational technologies have entered the classroom teachers will become more important than ever, whether as consultants and coaches, initiators or motivators.