Disrupted Education: Virtual Reality and Personalised Learning

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How will Virtual Reality impact education?

Laura Cox, Writer at iDisrupted (http://idisrupted.com) comments on the future of education thanks to Virtual Reality.

Albert Einstein once remarked, “It is a miracle that curiosity survives formal education.” Indeed, for many students, the controlled and often mundane classroom environment does little but breed boredom. However, the introduction of new technological equipment such as the SmartBoard, and a recognition that many people respond differently to various teaching styles, has revolutionised learning.

A huge wave of technological advancements has and will continue to affect education. Personalised schooling is soon to be transformed by a surge of innovation, but what effect will this have on the way that we learn – and teach? Thus far, modern scholasticism has embraced these developments, and now many schools both primary and secondary use laptops, interactive whiteboards (like the SmartBoard) and even iPads as learning aids. The blackboard and the textbook are without doubt endangered species – if not already extinct. We have already watched the internet place a wealth of information directly at our fingertips – but something even more potent is coming.

Disrupted Education - Virtual Reality(VR), the technology responsible for creating immersive and interactive worlds using advanced coding, was birthed by the gaming industry. However, it was quickly realised that the concept had much greater potential. Gamers suddenly had to share their shiny new toy with a host of other industries, and the education sector is next in line.

VR has the power to create new teaching spaces which, although they cannot physically exist, can provide virtual and, with time, highly accessible learning environments. The technology will enable new classrooms, but fundamentally change the ones that already exist. This year, Microsoft announced its development of a holographic computer called Microsoft HoloLens, which is capable of creating a “mixed reality”. The demo video shows programmes like Skype, Netflix and even a 3D version of Paint merging with both work and home settings – there’s even a holographic dog. Although tests have been described as ‘disappointing’, when applied to a classroom setting its potential is undoubtedly exciting.

VR is already used to train maintenance staff by National Grid in Boston, USA. Employees use training systems developed by the UK-based company Virtalis to solve real-life problems in a virtual environment. During these training sessions, a virtual instructor is constantly on hand to help. The systems are designed to make training far more interesting, giving a greater sense of reality and therefore engagement. Transfer this to the classroom, and students could enjoy personal and responsive virtual teaching – so far removed from chalkboards and grumpy old professors. It looks as if VR has the ability to turn all work into all play.

At first, this all sounds pretty positive. Instead of watching passive YouTube videos, VR will put the student directly in front of the teacher in a believable and immersive setting. The cutting edge technology is not only set to affect school-children – it could also lead to a more enabling version of

MOOC (Disrupted Education – Massive Online Open Courses).

These courses, available on the internet, can teach anybody almost anything, from Greek philosophy to quantum physics. Gareth Dybiec, a student and College Chairman at the University of York, is developing an online test to train new members of his college committee. “The benefit of this test is that it can be completed in their own time,” he said, “but I would never want to see it replace contact time with teachers. It should only be used as an additional resource.”

So online education as we know it today is beneficial for independent learning, but has drawbacks in that it eradicates human interaction. If online courses already lack in this area, how will VR address this problem? And what happens to institutionalised education when learning becomes ubiquitous? Universal subjects, taught to a universal audience, by universal teachers. . . It doesn’t exactly bode well for the profession when anybody has the ability to teach anything to anyone, with or without proper credentials. The MOOC provider IAI Academy actually offers ‘verified certificates’. A year-long, gruelling teaching course suddenly seems slightly pointless.

How exactly will VR affect institutionalised learning? The technology is expected to make students much more interested in the curriculum, especially in the STEM subjects of Science, Technology, Engineering and Mathematics. STEM subjects are thought to be too focused on theory and severely lack practical application. VR could revolutionise, for instance, the Chemistry lab – all the fun and no acid burns.
And what about non-STEM subjects, like English or Art? Tony Dench, head of the English Department at a Lincolnshire Grammar school, says, “I think VR has the potential to be used in every subject area. A VR guided tour through the Globe Theatre in Shakespeare’s time might suit English Literature.”

But what impact could this have for teachers, or even lecturers? “It could enhance what teaching staff do in that VR could offer a visual overview of subject areas for students, which is particularly useful in addressing different learning styles.”
So, Tony believes that VR can enhance a personalised style of learning – however as to whether or not it could mean the end of traditional teaching, he is sceptical. “I’m not convinced that this software could replace institutionalised education completely. The interactive relationship of teacher and learner requires more sensitivity in terms of a human response than I think VR can offer. . . Although,” he says, “This might depend on advancements in this area.”

The benefits of VR for subjects such as Engineering are clear, and could have a place within other core subjects like English, but what about the humanities? Online sites such as http://immersivevreducation.com/ appear to answer that question, by bringing historical events such as the Apollo 11 Moon Landing to life with the Oculus Rift headset. The experience begins with an original video of President Kennedy, and then cuts to the rocket launch itself, eventually showing Earth as it would be seen from space. By placing the student in the shoes (or rather the spacesuits) of the astronauts on board, their appreciation of the impact of the event can only grow.

If we accept the integration of VR into education, we have to address the question of material costs. The Oculus Rift developers pack currently sells for a few hundred quid. How will schools be able to afford this kind of technology? The not-so-distant future could see private schools kitted out with the latest headsets, whilst state school students are left without due to insufficient funding. And when state

schools finally do get their hands on the device, an even greater economic (and therefore social) divide will be created between Western education and that of less economically developed countries.

Does VR have great potential within education, or could it mean the break-down of modern teaching? VR could transform all areas of the curriculum into living, breathing experiences which we can fully engage with. It could allow all students, children or otherwise, to experience personalised teaching in amazing new ways. Despite these exciting possibilities, there are clear setbacks. It is unlikely that VR systems can provide the same depth of relationships as a human environment, which could have hugely damaging effects on our ability to interact with each-other. And what's more, the expensive headsets could drive an even deeper wedge between public and state education. If Virtual Reality does take off in the education sector, it is for certain that the very face of the way we are taught, and therefore the way we view our world, will be profoundly altered.

However – add artificial intelligence to the VR equation and teaching is up for some severe disruption.

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