A **BRAVE** NEW WORLD OF **EDUCATION**

It is seven in the morning on a Tuesday, and 23-year-old Mohammed Rashid is on the metro train for his eight o'clock class on financial accounting. Because 4G is the new standard, network availability is not a problem for him.

HE CAN

easily read the articles on accounting malpractices that his professor sent him. He can also watch the assigned video about Enron and be prepared for class discussions. Welcome to the brave new world of technological change.

Students and professors were never going to be spared. Sure enough, new technologies, including collaborative tools, mLearning, visualization tools, virtual learning environments, and flipped classrooms, have given a completely different dimension to learning. In many ways, they allow students to push their creative boundaries, and teachers to go beyond the textbook.

Collaborative learning is defined by the involvement of two or more students working together to do things such as solve an engineering problem, create a marketing presentation, or construct an econometrics model. Such collaboration can be facilitated with tools such as concept mapping, screen sharing, and virtual meetings. Gone are the days of meeting at the library. These tools help students ideate, create, and edit together, from anywhere. And the end result is usually a superior product, faster turnaround, and richer learning experience.

Of all the different groups in the Middle East, mobile Internet penetration is highest among students, according to a recent study. High mobile penetration levels give professors new ways to engage with students, outside the lecture hall. For example, handouts and articles can be read at any time and from anywhere. This is the true mobility of learning that John Traxler spoke of back in 2007. In the coming years, universities may also use augmented reality and wearables to engage with students and enable them to get more out of their courses.

The traditional chalkboard was the earliest visualization tool for students, making its debut way back in 1801. Today, there is a broad range of digital tools that enable students to learn visually. These tools equally equip students to learn subjects such as geography,

architecture, or even chemistry in a very interesting manner. For example, students in a chemistry class can simulate chemical reactions between different elements and visually see how bonds are formed. Another example is the CURVE (Collaborative

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University Research and Visualization Environment) at the Georgia State University. It consists of a 24-foot wide visualization wall, which promotes innovative inquiry by giving access to spatial data analysis.

Professors have used virtual learning environments, such as WebCT and

Blackboard, to complement their teaching for years. Apart from timely distribution of course content, these tools enable effective dialogues, assessments, and grading transactions. They also allow students to debate and learn from each other in a highly inclusive setting, which enables participation by those who might not speak up during class time.

Some educators, including those at the Middle East College in Oman, are experimenting with the flipped classroom, a method that reverses the traditional lecture model. In this model, students' initial exposure to content occurs before the lecture, and outside the lecture hall through online readings, instructional videos, collaborative activities, and learning apps. Thus, class time is spent on discussions, team-based learning, and application exercises. One major benefit of the flipped classroom is that it promotes critical thinking. In addition, this method often turns students into adaptive learners; a necessary attribute in today's world.

The technological opportunities are truly endless—a day may soon come when medical students will be able to 3D print a kidney for actual transplant. Close to 75% of students in the US prefer classes with at least a moderate level of technology, and this will be reflective of the Middle East student population as well. When technology is readily available to students, they are better able to access information and learn actively. Research also shows that technology increases a student's self-esteem and motivation to learn. Technology truly paves a path to educational excellence. And in the next few years, it will become very critical for educational institutions to manage these advances effectively.

As more and more assignments are submitted on the cloud for real-time feedback from professors, it is no surprise that, according to American educator Alan November, teachers need to stop saying, "Hand it in," and start saying, "Publish it," instead.