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EDITORIAL

The impact of technology on dental education

“It is New Year’s Day, 1895. My name is Hans. For seven generations my family has made the finest buttons in the region, using good local horn. Today I learned that the railroad is coming to our village. My friend Olaf says that cheap factory buttons will come on the trains, but that they will never compete with my craftsmanship. I think he is part right and part wrong. They will come, but they will compete with my buttons. I must make some choices: I can become a distributor for the new buttons, or I can invest in the machinery to make buttons and export them. Or, closest to my heart, I can refine my craft and sell exceptional buttons... I cannot stop the train; I must change.”

William A. Wulf in “University Alert: The Information Railroad is Coming.” (Wulf, 1994)

The mission of most dental schools is to teach individuals to become clinicians with patient care, research and community/global service as the basis. Information technology is shaping our environment at a very fast rate and it is difficult not to get on the “train”, although there is a lot of uncertainty in the cost, learning outcomes and impact of information technology on our teaching.

Information technology is shaping higher education and professional education on several fronts. The way we interact with our students physically and virtually and the very definitions of the university as a physical space are being tested. Libraries are no longer “inhabited” by faculty and students who used to search the stacks to find an important article only to find that journal, that article has already been “checked” out. Instead students and faculty expect to be able to access high quality journals through their university Library websites. Books are now available in digital formats and some schools require students to “purchase” packages of digital text-books for the whole curriculum. Many disciplines that student’s had to “memorize” such as pharmacology and drugs are now available at the student’s finger-tips. Student’s are also accessing materials on different devices. A 2011 Pew Survey (<http://pewinternet.org/>) reported that 49% of americans aged

18–24 own a smart phone. Student’s will expect to have content delivered to these devices and to the new generation of tablets. Content that is “alive and interactive” in the form of videos will also have to be developed. The University as a “physical” entity is also being challenged as more and more Universities develop an online presence. MOOCs (Massive open online courses) are being developed along with secure learning management systems (LMS). Coursera <https://www.coursera.org> has over 2 million users and a recent collaboration between Harvard and MIT edX (<https://www.edx.org>) has now added Georgetown and Berkley to their consortium.

How will all of this affect dentistry? One thing is certain-we will be the ‘recipients’ of a generation of students that will have come from a very different learning environment. This generation will soon tire of our traditional ways of teaching in dental schools. From an academic standpoint however, there are many questions that are left unanswered. Wulf captures these items for us to consider in his article (Wulf, 1994).

Wulf asks universities to consider whether they will become “manufacturers or distributors, or niche tutors to the privileged”.

He asks if all universities should continue to deliver a full complement of courses, or should they share courses (for example biochemistry or oral radiology).

He asks us to think if faculty will be static or dynamic-lending their ‘presence’ in virtual worlds to other schools/students.

Could we see a future where students have “diverse” transcripts with courses from many institutes being counted towards a degree.

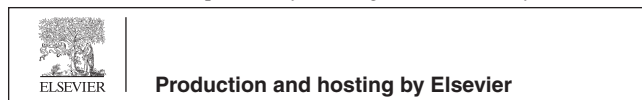
He asks if universities might see “mergers” like in the corporate world. Indeed these “mergers” are happening in the form of platform’s that deliver course content from several universities.

Wulf poses the question about how universities will serve the global need for higher education using technology.

Finally in recognizing the physical “social” interaction that takes place at Universities, Wulf wonders whether this function might not be served by a “social service” organization.

In dentistry and in medicine we clearly need to teach our student’s patient-doctor skills and how to clinically diagnose and treat disease using motor skills, problem solving skills and critical thinking. This however is no excuse for us not to

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change-for the “railroad is coming and we cannot stop the train”.

Reference

Wulf, Wm.A., 1994. University Alert: The Information Railroad Is Coming. <www.cs.virginia.edu/~wulf/documents/buttons.html>

Nadeem Karimbux
*Professor of Periodontology, Associate Dean, Academic Affairs,
Tufts University School of Dental Medicine,
One Kneeland Street, DHS-1512,
Boston, MA 02111, United States*
E-mail address: nadeem.karimbux@tufts.edu