Perspectives@SMU   Centre for Management Practice

10-2013

Disruptive innovation in the classroom

Singapore Management University

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How mobile technology apps can change higher education

Disruptive innovation, as described on the website of the man who coined the term, Clayton Christensen, is "a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors". Prominent examples include how the personal computer (disruptor) displaced the mainframe computer (disruptee), cellular phones displacing fixed line telephony, and community colleges eating into the market share of four-year colleges.

The latter two examples converge to pose a question that **Thomas Menkhoff**, Professor of Organisational Behaviour and Human Resources (Education) at Singapore Management University's Lee Kong Chian School of Business, sought to address in a recent SMU Alumni Knowledge Exchange event, "*Mobile Learning Apps: Mastering a Disruptive Innovation*".

"Some observers look at mobile learning apps as something which can potentially disrupt class proceedings because students who are using mobile gadgets in class might be labelled as disinterested learners who are not paying attention to the instructor," says Menkhoff, who adds, "My view is different from such notions."

Disrupting education

"For me, mobile technology applications are potentially disruptive because they might eventually disrupt the business model of universities," Menkhoff told *Perspectives@SMU*. "The rationale is simple: as the number of mobile users owning a smart phone or tablet increases rapidly, more learners are making use of their mobile devices in and outside classrooms, in MBA programmes, during impromptu site visits etc., to source for new knowledge, to exchange views with peers and experts or to download Youtube videos to better appreciate abstract concepts taught in class (by instructors who might or might not appreciate their students' 'subversive' behavior)."

On top of that, Menkhoff mentions new trends such as Massive Open Online Courses (MOOCs) to which he believes Asian educators and policymakers should pay attention and respond to. He concludes: "I would argue that many educators are not sufficiently prepared to deal with this mobile revolution."

Dealing with disruption

MOOCs and the increasing availability of off-campus instruction may have made physical campuses less important, but the feelings of connectedness and engagement that comes from being on campus remains important; it can also be recreated through social media.

"Research in higher education has shown a positive correlation between the use of mobile technologies and students' engagement, provided a couple of conditions are met such as strong feelings of what e-Learning experts call 'social presence' amongst virtual learners," Menkhoff explains. "Instructors are instrumental in creating such social presence feelings, e.g. by providing regular online chat schedules late at night in line with students' lifestyles."

Menkhoff adds, "If one's stakeholders are within walking distance, it's probably much better to discuss issues face-to-face rather than relying solely on social media. Water cooler chats, joint group dinners, communities of interest etc. are essential in nurturing group cohesion and usually lead to higher performance levels. If you integrate mobile interactions into blended learning, you minimise the risk of producing counterproductive connectivity outcomes."

Disruption in the office

If mobile technology is disruptive in the educational sector, what about the workplace? How should supervisors look at younger workers who seem more interested in social media than doing what is believed to be "real work"?

"They need to change their mental models and be open towards change," Menkhoff advises. "I would argue that there are still a large number of people out there who have not been adequately trained with regards to the effective utilisation of mobile social media tools, whether collaboration-orientated ones or specific crowd-related tools which could enhance open innovation efforts."

Much of this is caused by the difference in the divide between digital natives and digital immigrants, which Menkhoff says is important to acknowledge and adjust for.

"I would classify most of my undergraduate students as digital natives. This generation knows how to effectively master technology and is using a multitude of different gadgets, sometimes simultaneously," says Menkhoff. "Baby boomers have lots to learn from the digital natives (and vice versa). The bottomline is that the typical mobile device user utilises that device 150 times every day by sending SMSes, searching for information, taking pictures etc."

"Getting the most out of this new trend requires a new mindset amongst both classroom instructors and supervisors."

For further reading:

Thomas Menkhoff, Thang Tze Yian, Chay Yue Wah and Wong Yue Kee. "Using Web-Based ICT in Learning: A Case Study of a Knowledge Management Programme", *The Journal of Information and Knowledge Management Systems*, Vol. 41, No. 2, 2011.

Thomas Menkhoff and Magnus Lars Bengtsson. "Engaging Students in Higher Education Through Mobile Learning: Lessons Learnt in a Chinese Entrepreneurship Course", *Educational Research for Policy and Practice*, Vol. 11, pp. 225-242.