Technology, over the last 3 decades, has redefined how we live and communicate, and more importantly how we learn. Previously, the life of knowledge was measured by decades. Today knowledge is growing exponentially and in many fields, is measured in months and years. Technology is also making the content irrelevant as we move towards a more competency based world; where the focus is on what we can do with what we know. It is argued that the amount of knowledge in the world is doubling every 18 months and to combat this “shrinking half-life of knowledge”, new methods of instruction need to be developed (Gonzalez, 2004).

This paper will argue the value of blended teaching strategies, which integrates online learning with face-2-face interactions, and its potential to reshape higher education instruction. The role of the teacher and student is redefined. Teachers will have to be quality mentors and facilitate learning, while the students become active and responsible for their learning. Technology enabled teaching and learning helps empower students with the essential graduate attributes of professional autonomy and accountability, collaboration, communication, professional ethics, empathy, reflective and critical thinking, problem solving, adaptability, creativity, initiative, and global connectedness.
RESHAPING EDUCATION
for the 21st century RADIOGRAPHER

ROSHNEE SUNDER
MTech: Radiography
SORSA/RSSA 2013 Imaging Congress
24 August 2013
• “20th century educational strategies are unfit to tackle 21st century challenges”

  – Fragmented, outdate & static curricula
  – Mismatch of competencies to patient needs
  – Poor teamwork
  – Narrow technical focus without broader contextual understanding
  – Tribalism of professions – major cause

Reshaping Education for the 21st Century Radiographer

Educational Reforms

- **1st generation – 20th century** Science based curriculum
- **2nd generation – mid century** - Problem based curriculum
- **3rd reform – essential** → transformative learning
  - Mobilise knowledge
  - Engage critical thinking/reasoning
  - Ethical conduct
  - Socially responsive
  - Global connected
  - Responsible, lifelong learning

• Informative learning – acquisition of knowledge and skills
• Formative learning – socialises students around values and produces a professional – vocational
• Transformative learning – developing leadership attributes → enlightened “change agents”
• 3 fundamental shifts
  – Fact RECALL → searching, analysing & synthesising information
  – Seeking professional credentials → achieving core competencies
  – Non-critical adoption of educational resources → creative adaptation of global resources to address local priorities

DO YOU REALIZE?

http://www.youtube.com/watch?v=O35n_tvOK74
Student-Centered-Learning

21stCenturyLearning

CriticalThinking

Creativity

Connectedness

Problem-solving

Reflective-thinking

Technology

Innovation

Techno-savvy

Diversity

Tolerance

Media-driven

Adaptable

Global

Personalised

Active

Lifelong-learning

FLIPPED-classroom

Knowledge-producers

Responsibility

Data-rich

Empowered

Cultural-awareness

Digital-literacy
Grad Attributes

- Responsible, independent and accountable
- Critical thinking/reasoning and problem solving
- Creativity and Innovation
- Collaboration, Communication & Global Connectedness
- Reflective practice and lifelong learning
LMS

Reshaping Education for the 21st Century Radiographer

Registration for instructor-led and e-learning courses

Delivery of online learning materials and courses

Tracking and reporting of learning

Blackboard

Sakai

edmodo

moodle
<table>
<thead>
<tr>
<th></th>
<th>Web 1.0</th>
<th>Web 2.0</th>
<th>Web 3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaning is...</strong></td>
<td>Dictated</td>
<td>Socially constructed</td>
<td>Socially constructed &amp; contextually reinvented</td>
</tr>
<tr>
<td><strong>Technology is...</strong></td>
<td>Confiscated at the classroom door (digital refugees)</td>
<td>Cautiously adopted (digital immigrants)</td>
<td>Everywhere (digital universe)</td>
</tr>
<tr>
<td><strong>Teaching is done...</strong></td>
<td>Teacher to student</td>
<td>Teacher to student &amp; student to student</td>
<td>Teacher to student, student to student, &amp; student to teacher</td>
</tr>
<tr>
<td><strong>Schools are located...</strong></td>
<td>In a building</td>
<td>In a building or online</td>
<td>Everywhere &amp; thoroughly infused into society</td>
</tr>
<tr>
<td><strong>Parents view schools as...</strong></td>
<td>Daycare</td>
<td>Daycare</td>
<td>A place for them to learn, too</td>
</tr>
<tr>
<td><strong>Teachers are...</strong></td>
<td>Licensed professionals</td>
<td>Licensed professionals</td>
<td>Everybody, everywhere</td>
</tr>
<tr>
<td><strong>Hardware &amp; software in schools...</strong></td>
<td>Are purchased at great cost and ignored</td>
<td>Are open source and available at lower cost</td>
<td>Are available at low cost and are used purposively</td>
</tr>
<tr>
<td><strong>Industry views graduates as...</strong></td>
<td>Assembly line workers</td>
<td>As ill-prepared assembly line workers in a knowledge economy</td>
<td>As co-workers or entrepreneurs</td>
</tr>
</tbody>
</table>

http://teachbytes.files.wordpress.com/2013/03/web-1.jpg
Towards the m-portfolio

Background: ‘m’ is for Mobile!

PDAs

Laptops / Compact Laptops

Tablet PCs

Mobile phones

‘Smart phones’

Games consoles

‘Ultra Compact’ computers

‘hybrid’ devices

Media players (podcasting +/- video)
The Flipped Classroom

**Before**
Students prepare to participate in class activities

**During**
Students practice applying key concepts with feedback

**Out of Class**
Students check their understanding and extend their learning

**After**

http://ctl.utexas.edu/ctl/sites/default/files/flippedflowmodel.png
Student Created Media & Authentic Publishing

actual production of the video the most enjoyable

Creativity was sparked

this is where our group had the most amount of fun whilst learning

aided us with much useful computing skills and more of an astute eye for detail

From the get go I have never before had some much fun

experience of a lifetime
Tweet or Skype to Connect with Experts
Finally

Reshaping Education for the 21st Century Radiographer

Experience the amazing power of technology
THANK YOU